Croto-Games

7	22	17	13	19 → 10	$(22-17)+(7-(14÷13))=10$
25	6	2	1	14 → 20	$(25-14)+6+2+1=20$
14	3	5	4	4 → 11	$(4-4)\times5)+14-3=11$
15	15	6	16	24 → 1	$(24+6)/15)-(16-15)=1$
4	21	8	3	12 → 6	$(21-3)-12)÷3+4=6$

$21÷3-(12-4)÷8$

$$\begin{array}{r} 39 \\ -16 \\ \hline 23 \end{array}$$

Name *Michael Plasmeier*   Date *3/25*

Study Guide Worksheet 1-7

Algebra: Order of Operations

Algebraic expressions are evaluated using these rules.

Order of Operations

1. Do all operations within grouping symbols first.
2. Do multiplication and division from left to right.
3. Do addition and subtraction from left to right.

Example   Evaluate $56 \div (17 - 9) + 7 \times 3$.

$$56 \div (17 - 9) + 7 \times 3 = 56 \div 8 + 7 \times 3$$
$$= 7 + 7 \times 3$$
$$= 7 + 21$$
$$= 28$$

Subtract 9 from 17.
Divide 56 by 8.
Multiply 7 and 3.
Add 7 and 21.

(handwritten: $56 \div 8 + 21 =$, $7 + 21$, 28, and long division $6\overline{)56}$)

Name the operation that should be done first.

1. $(9 + 3) \times 7$ *additon*

2. $98 - (5 \times 7)$ *multiplication*

3. $5 \times (9 - 1)$ *subtract*

4. $(15 \div 3) + (4 + 5)$ *division*

5. $5 \times 4 \div 2$ *multiplicatio*

6. $5(5 - 3) \times 2$ *subtraction*

Evaluate each expression.

7. $2 \times 9 + 5 \times 3$
   18 + 15
   33

8. $(9 - 4) \div 5$
   5 ÷ 5
   1

9. $10 - 4 + 1$
   6 + 1
   7

10. $15 - 18 \div 9 + 3$
    15 - 2 + 3
    16

11. $30 \div (12 - 6) + 4$
    30 ÷ 2 + 4
    15 + 4
    19

12. $(72 - 12) \div 2$
    6 ÷ 2
    4

13. $2(16 - 9) - (5 + 1)$
    2 × 7 - 6
    8

14. $(43 - 23) - 2 \times 5$
    20 - 2 × 5
    26 - 10
    10

15. $90 - 45 - 24 \div 2$
    90 - 45 - 12
    33

16. $81 \div (13 - 4)$
    81 ÷ 9
    9

17. $7 \times 8 - 2 \times 8$
    56 - 16
    40
    7

18. $71 + (34 - 34)$
    71 + 0
    71

(handwritten: $\frac{45}{12}$, 33)

Glencoe Division, Macmillan/McGraw-Hill

Study Guide Worksheet 1-8

Algebra Connection: Variables and Expressions

The area of a triangle can be found by multiplying the base of the triangle by the height of the triangle and then dividing by 2.

If we use b to represent the base of the triangle and h to represent the height of the triangle, the area of the triangle can be found by evaluating the *algebraic expression* below.

height h

base b

$$\frac{bh}{2}$$

The values of b and h change for different triangles. They are called *variables*.
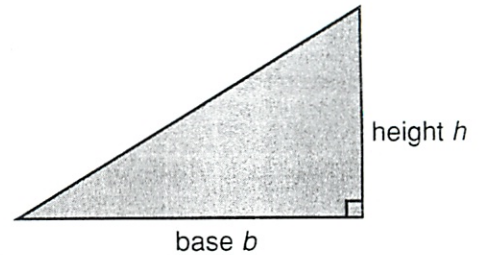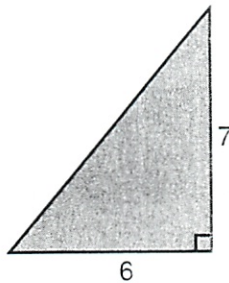
Examples   Find the area of each triangle.

Triangle A

Evaluate $\frac{bh}{2}$
if $b = 6$
and $h = 7$.

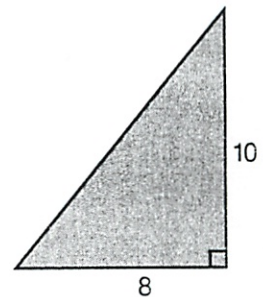$$\frac{6 \times 7}{2} = \frac{42}{2}$$

$$= 21$$

The area is 21 square units.

Triangle B

Evaluate $\frac{bh}{2}$
if $b = 8$
and $h = 10$.

$$\frac{8 \times 10}{2} = \frac{80}{2}$$

$$= 40$$

The area is 40 square units.

Evaluate each expression if $a = 2$, $b = 3$, $c = 4$, and $d = 12$.

1. $c + 2a$
   4+2×2
   4+4
   8

2. $19 - d$
   17

3. $3(b + 5)$
   3
   3×8
   24

4. $bc \div 12$
   3×4
   12 ÷ 12
   1

5. $a - c + 6$
   8 +6
   14

6. $a(d \div b)$
   2 12 3
   2y
   18

7. $15 - ab$
   15·6
   9

8. $6ca$
   24×2
   48

9. $6 + \frac{d}{c}$
   12
   4
   6+3
   9

10. $\frac{d}{2a} - b^3$
    17d
    6 - 3

11. $20 - \frac{2b}{a}$
    26-3
    20-6
    2
    20-3
    17

12. $6c - 4b$
    9
    24 - 12
    12

13. $7ab$
    14×3
    56

14. $a(6 + c) + 1$
    2y 10 +1
    20 +1

15. $2c + 2b - d$
    8 +6 -12
    14 -12
    2

16. $d + ac$
    12+8
    20

8

Practice Worksheet 1-7

Order of Operations

Name the operation that should be done first.

1. $5 + 4 \cdot 7$

$5 + 28$

33 ✗

2. $13(6 + 3)$

13×9

117 +

3. $(4 - 2) + 6$

$2 + 6$

8 —

4. $6 \times 8 \div 4$

$48 \div 4$ ✗

12

5. $32 - 4 \div 2$

$32 - 2$

30 ÷

6. $9(4 + 2) \div 3$

$9 \times 6 \div 3$ +

$54 \div 3$

Evaluate each expression.

7. $8 \cdot 7 + 8 \cdot 3$

$56 \quad 24$

80

8. $(9 - 3) \div 3$

$6 \div 3$

2

9. $8 - 6 + 3$

$2 + 3$

5

10. $18 \div 3 \cdot 6$

6×6

36

12. $24 \div (6 - 2)$

$24 \div 4$

6

11. $9 - 4 \div 2 + 6$

$9 - 2 + 6$

13

13. $18 - (7 - 7)$

$18 - 0$

18

14. $32 \div (8 - 4)$

$32 \div 4$

8

15. $90 - 16 \div (4)$

$90 - 4$

86

16. $3(18 - 12) - (5 - 3)$

$3 \times 6 \quad 2$

$18 \quad 2$

16

17. $(24 - 10) - 3 \times 3$

$14 \quad 9$

5

18. $4(22 - 18) - 3 \cdot 5$

$4 \times 4 \quad 15$

$16 - 15$

1

19. $12(5 - 5) + 3 \cdot 5$

$12 \times 0 + 15$

15

20. $18(4 - 3) \div 3 + 3$

$18 \div 3$

$6 + 3$

9

21. $(34 + 46) \div 20 + 20$

$80 \div 20 + 20$

24

22. $92 - 66 - 12 \div 4$

$92 - 66 - 3$

23

23. $9 \cdot 3 + 8 \div 4$

$27 + 2$

29 → 20 *Mrs. Say correct*

24. $9 + (18 \div 3)$

$9 + 6$

15

Use your calculator to determine where to insert parentheses to make each sentence true. You may use the parentheses keys.

25. $(32 + 8) \times 3 \div 4 = 30$

26. $(15 - 3) \div (1 \cdot 6) = 2$

27. $\left(\frac{88}{22} + 8\right) \div 3 = 4$

28. $18 \div (3 + 3) - 2 = 1$

29. $(16 - 8) \div 4 + 10 = 12$

30. $5 \cdot (5 + 5) - 5 = 45$

31. $(6 + 6 \div 6) \cdot 6 = 42$

32. $200 - (90 + 80 + 20) = 10$

Glencoe Division, Macmillan/McGraw-Hill

Algebra Connection: Variables and Expressions

Evaluate each expression if $x = 5$, $y = 4$, and $z = 3$.

1. $x + 3$
8

2. $z - 3$
0

3. $10 - z$
7

4. $13 + y$
17

5. $x + z$
8

6. $y + z$
7

7. $y + 3 - z$
7-3
4

8. $x - 2 + z$
3+3
6

9. $x - x + 4$
0+4
4

10. $x - y + 8$
1+8

11. $xy - 2$
20-2
18

12. $xz - 4$
20-4
4

13. $yz + 10$
12+16
22

14. $yz - 10$
12-10
2

15. $xz + 4$
15+4
18

Evaluate each expression if $a = 8$, $b = 4$, and $c = 2$.

16. $a + b + c$
14

17. $4b + a$
16+8
24

18. $cb - a$
8-8
0

19. $\frac{8a}{b} + 5$
2+5
7

20. $3bc$
24

21. $\frac{8a}{b} + c$
2+2
4

22. $\frac{2a}{4} - b$
16/4
4-4=0

23. $3(b + a) - c^2$
3×12
36-2
34

24. $2b - 3c$
8-6
2

25. $\frac{2b}{c}$
8/2 →4

26. $\frac{6(a + c)}{b}$
6×10/4   60/4 →15

27. $b(b + a) - b$
4×12 -4
48-4
44

Evaluate each expression if $a = 12$, $b = 3$, $c = 4$, $m = 9$, and $n = 3$.

28. $\frac{9m}{n} + 6$
3+6=9

29. $1mn$
9×3
27

30. $\frac{a}{c} - b$
3-3
0

31. $\frac{3n}{m} + 4$

32. $3(n + n) - m$
3×6=9
18
-9=9

33. $4c - 3b$
16-9
7

34. $10 - \frac{2m}{n}$

35. $\frac{3(b + c)}{b + c}$
3×7/7

36. $b(c + b) + c$
3×1+4
3+4
7

Quiz -- Terra Nova
Review   (**50** Points)

Name: Michael Plosmaei

1. _A_

2. _C_

3. _C_

wrong, 2   4. _B_

5. _D_

I fand   6. _C_

P ~ 2   7. _B_

8. _D_

9. _D_

10. _B_

11. _B_

12. _A_

13. _D_

14. _C_

15. _B_

16. _C_ 2

17. _A_

18. _A_

19. _C_

20. _B_

21. _C_

22. _D_

23. _C_

24. _C_

25. _C_

Name: Michael Plasmeier

$A = \pi r^2$
$c = \pi d$

1.

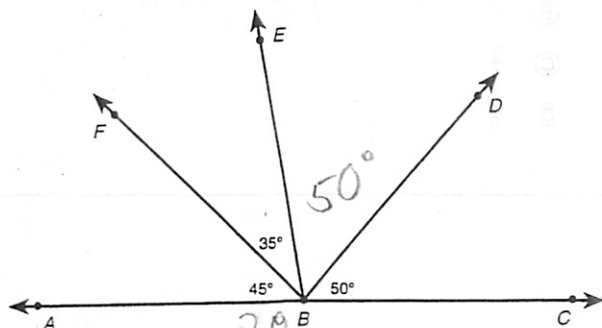*Units* graph — Grade 5, Grade 6, Grade 7, Grade 8; Plain milk, Chocolate milk
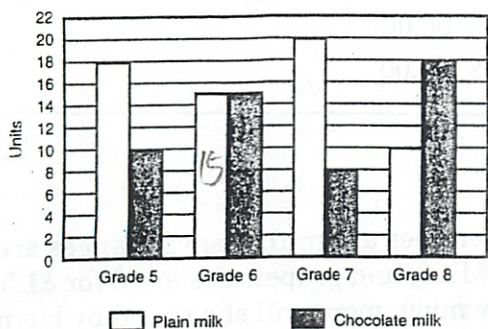
If chocolate milk costs 10 cents more per carton than plain milk, how much more did the sixth graders as a class spend on chocolate milk than on plain milk?

Ⓐ $1.50
Ⓑ $0.10
Ⓒ $1.30
Ⓓ $0.20

15
× .1
1.5 = $1.50

✳ 2. Which angle has the greatest measure?

50°
35°
45°   50°
80

Ⓐ ∠FBD   85°
Ⓑ ∠ABE   80°
Ⓒ ∠ABD   130°
Ⓓ ∠DBC   50°

180
-80
100

160
-50
56

✳ 3. Mariko placed pencils in boxes. She put 10 pencils in the first box, 14 pencils in the second box, and 18 pencils in the third box. If the pattern continued, how many pencils did Mariko put in the tenth box?

Ⓐ 50   Rule +4
Ⓑ 42
Ⓒ 46
Ⓓ 18

① ② ③ ④
10 14 +14 18 +4 22
c / 6 / 7 +4 8 +10
26 30 34 38 42 46

✳ 4. Which of these fractions is greater than $\frac{1}{3}$ and less than $\frac{5}{8}$?

Ⓐ $\frac{2}{9}$
Ⓔ $\frac{1}{4}$
Ⓒ $\frac{2}{3}$
Ⓓ $\frac{7}{12}$

$\frac{1}{3}$ $\frac{1}{4}$ $\frac{5}{8}$

Common denominators

5. Juan has a bag that contains 25 blocks. There are 12 red blocks, 8 green blocks, and 5 blue blocks in the bag. If Juan reaches into the bag without looking, what is the probability he will not pick a green block from the bag?

Ⓐ $\frac{8}{25}$
Ⓑ $\frac{12}{25}$
Ⓒ $\frac{1}{5}$
Ⓓ $\frac{17}{25}$

$\frac{17}{25}$

6. Which of these is **not** another way to write 0.375?

Ⓐ $\frac{3}{8}$
Ⓑ 37.5%
Ⓒ $\frac{1}{4}$
Ⓓ $\frac{375}{1,000}$

7. The area of a rectangle is 24 cm². If the length of the rectangle is 8 cm, what is the width of the rectangle?

Ⓐ 6 cm
Ⓑ 4 cm
Ⓒ 16 cm
Ⓓ 3 cm

8
4) 24
8

$A = \ell \times w$
$24 = 8 \times \Box$
$24 \div 8$

24
-16
8 ÷ 2 = 4

$w = 24 \div 8$

8. Which of these statements about measures is the most accurate?

   Ⓐ An average automobile gas tank holds 3 liters of gas.

   Ⓑ An average swimming pool holds about 50 quarts of water.

   Ⓒ The Atlantic Ocean contains about 10,000 gallons of water.

   ● A soda can holds about $1\frac{1}{2}$ cups of soda.

---

* 9. The inside measurements of Lenny's storage chest are noted below. How many cubic feet of clothing could the chest hold?

   4 ft

   3 ft

   7 ft

   Ⓐ 14 ft^3

   Ⓑ 25 ft^3

   Ⓒ 56 ft^3

   ● 84 ft^3

$7 \times 3 \times 4$ ft^2

21×4 ft^2?!

84 ft^2
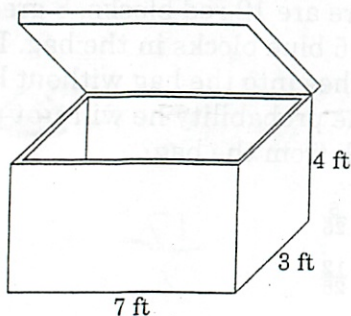
Wordy

* 10. Mara and Ann are each rolling a die once to see who will start the game they are playing. The player with the higher roll begins the game. Mara rolled a 2. What is the probability that Ann will roll a number higher than 2 and get to start the game?

   Ⓐ $\frac{1}{3}$

   Ⓑ $\frac{2}{3}$

   Ⓒ $\frac{5}{5}$

   Ⓓ $\frac{1}{2}$

P(higher than 2)

# of higher than 2's

# of outcomes

$\frac{4}{6} , \left(\frac{2}{3}\right)$

---

* 11. Alana paid $90 dollars plus 6% sales tax for a new coat. What was the total cost of the coat?

   Ⓐ $ 96.00

   ● $ 95.40

   Ⓒ $ 95.00

   Ⓓ $100.00

```
   90
 x1.06
  540
 9000
 95.40  = $95.40
```

---

* 12. Karen sees a sign that says oranges are 5 for $1.20, and grapefruits are 6 for $1.50. How much more will she spend by buying one grapefruit instead of one orange?

   Ⓐ $0.01

   Ⓑ $0.05

   Ⓒ $0.25

   Ⓓ $0.30

5⟌1.20 .24 orange

6⟌1.50 .25 grapefruit

.25 - .24 = .01

Probability ✓ Wordy

---

* 13. Jan manages a pet store. During the morning 24 adults and 16 children entered the store. What is the probability that the next customer will be a child?

   Ⓐ $\frac{3}{5}$

   Ⓑ $\frac{2}{3}$

   Ⓒ $\frac{1}{4}$

   ● $\frac{2}{5}$

P(child) $\frac{\text{\# of children}}{\text{\# of people}}$ $\frac{16}{40} , \frac{8}{20} , \frac{4}{10} , \frac{2}{5}$
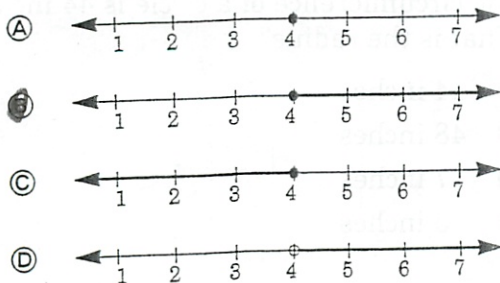
---

* 14. Jacob, Terry, and Siko all live on the same road. Jacob lives $\frac{2}{3}$ mile east of Terry, and Siko lives 3 times as far to the west of Terry as Jacob does to the east. How far apart do Siko and Terry live?

   Ⓐ $\frac{2}{9}$ mile

   Ⓑ $\frac{2}{3}$ mile

   ● 2 miles

   Ⓓ $2\frac{2}{3}$ miles
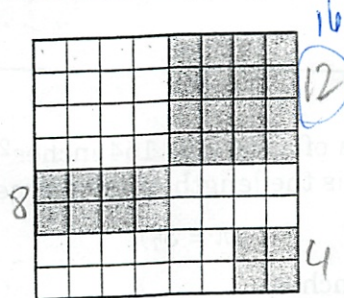
W → E

$\frac{2}{3} \times 3$

$\frac{6}{3} , 2$

$\frac{2}{5}$? $\frac{2}{3}$?

15. Which number line indicates that $x \geq 4$?

Ⓐ

Ⓑ

Ⓒ

Ⓓ

16. What fraction of the figure is shaded?

$\frac{64}{-24}$
$\frac{}{40}$

Ⓐ $\frac{3}{4}$

Ⓑ $\frac{1}{2}$

Ⓒ $\frac{5}{8}$

Ⓓ $\frac{7}{16}$

$\frac{46}{64} \to \frac{20}{32} \to \frac{10}{16} \to \frac{5}{8}$

17.

| Car	Annual Average Fuel Cost
Subcompact	$375
Compact	$450
Midsize	$669
Large	$853
Pick-up truck	$938

If the subcompact is driven 10,000 miles in a year, what is the approximate average fuel cost per mile?

Ⓐ $ 0.04

Ⓑ $ 0.40

Ⓒ $ 4.00

Ⓓ $40.00

$.03.7 = .04$

$10,000 \overline{)375.00}$
$-30000 \quad | 300$
7500
$70000 \quad | 70$
Change

The following bar graph represents the number of pets owned by each student in Karen's class. Use the graph to answer questions 18 - 20

$8 + 14 + 15 + 12 + 5$ 54
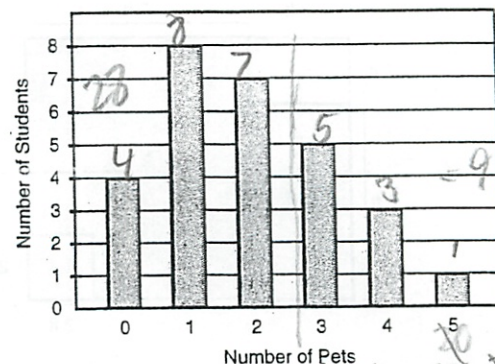
18. How many pets are represented by the graph?

Ⓐ 54

Ⓑ 58

Ⓒ 32

Ⓓ 28

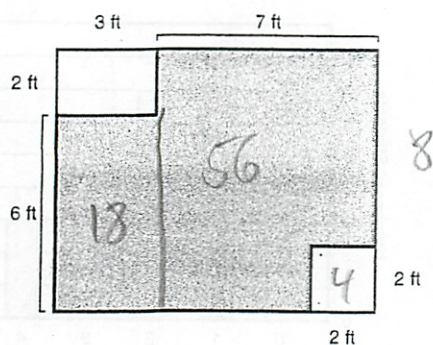**19.** How many students have more than 2 pets?

Ⓐ 5

Ⓑ 3

Ⓒ 9

Ⓓ 1

$5 + 3 + 1 = 9$

20. What fraction of the class has exactly 2 pets?

Ⓐ $\frac{1}{7}$

Ⓑ $\frac{1}{4}$

Ⓒ $\frac{1}{2}$

Ⓓ $\frac{1}{28}$

$P(2 \text{ pets})$ $\frac{\text{kids w/}}{\text{# of 2 pets}} \frac{7}{\text{# of kids}} \frac{7}{28} \to \frac{1}{4}$

* 21. Saul planted grass in the shaded area of his backyard. What area did he cover with grass?

3 ft   7 ft

2 ft

6 ft

56

18

8

4   2 ft

2 ft

$\frac{56}{4}$

52

·18

70

- Ⓐ   80 ft²
- Ⓑ   10 ft²
- Ⓒ   70 ft²
- Ⓓ   16 ft²

---

* 22. Which fraction is missing from the number pattern?

$$1, \frac{7}{8}, \frac{3}{4}, \frac{5}{8}, \frac{1}{2}, \underline{\quad}, \frac{1}{4}$$

- Ⓐ $\frac{5}{16}$
- Ⓑ $\frac{1}{3}$
- Ⓒ $\frac{2}{8}$
- Ⓓ $\frac{3}{8}$

$\frac{8}{8} \frac{7}{8} \frac{6}{8} \frac{5}{8} \frac{4}{8} \frac{3}{8} \frac{2}{8} \frac{1}{8}$

---

* 23. Jason has 4 coins that total 45¢. Alma has 3 times as many quarters and 4 times as many nickels as Jason has. They both have the same number of dimes. How much money does Alma have?

- Ⓐ $0.80
- Ⓑ $0.90
- Ⓒ $1.25
- Ⓓ $1.50

J = (Q)(D)(N)(N) 45¢

A = (QQQ)(D)(NNNN)(NNNN)

75¢   10   20   20   =$1.25

---

* 24. The circumference of a circle is 44 inches. What is the radius?

- Ⓐ   14 inches
- Ⓑ   48 inches
- Ⓒ   7 inches
- Ⓓ   3 inches

$C = \pi d$

$\frac{C}{d} = \frac{\pi}{1}$ $\frac{44}{?} = \frac{22}{7}$ $\frac{44}{14} = \frac{22}{7}$

$=d \times \frac{1}{2} = 7 = r$

---

* 25. The area of a circle is 154 inches². Which of these is the length of the diameter?

$$(\pi = 3\tfrac{1}{7})$$

- Ⓐ   32 inches
- Ⓑ   21 inches
- Ⓒ   14 inches
- Ⓓ   7 inches

$a = \pi r^2$

$154 = 3.14 \, r \, r$

$\sqrt{49} = 7 = r = r \times 2 = 14 d$

$154 \div \frac{22}{7}$

$\frac{154}{1} \times \frac{7}{22} = \frac{107}{22}$

$\begin{array}{r} 154 \\ \times 7 \\ \hline 1078 \end{array}$

$1078 \div 22$

49

$22\overline{)1078}$

−880 / 40

198

−88 / 4

110

−88 / 4

22 / 1

$\frac{37}{37}$ ✱

Name: __Michael Plasmeier__

Evaluate each expression. No work → no credit!

1→ 8·2 + 9·3
     16 + 9×3
     16+27
     ㊸

2→ 16 - 8 ÷ 4 + 2·3
     16 - 2 + 2×3
     16 - 2 + 6
     14+6
     ⑳

3→ 3(8+4) + 7
     3×12+7
     36+7
     ㊸

4→ 5·4 + 3(4+9)
     5×4+3×13
     20 + 3×13
     20+39
     ㊾

$\frac{27}{\underline{\div 16}}$

$\frac{13}{\underline{}}$
$\underline{39}$

5→ 84 - 28 ÷ (11+3)
     84 - 28 ÷ 14
     84 - 2
     ㊷

6→ A + B   A = 7
     7 + 18   B = 18
     ㉕

7→ m + nw   m = 6
     6 + 2×9   n = 2
     6 + 18   w = 9
     ㉔

8→ 22 - 2(c-d)   c = 8
     22 - 2(8-5)   d = 5
     22 - 2×3
     22 - 6
     ⑯

9→ $13 - \dfrac{3m}{c}$ $m = 12$ $c = 6$

$13 - \dfrac{3 \times 12}{6}$

$13 - \dfrac{36}{6}$

$13 - 6$

(7)

10→ $\dfrac{8(m+n)}{w}$ $m = 7$ $n = 8$ $w = 5$

$\dfrac{8(7+8)}{5}$

$\dfrac{8 \times 15}{5}$

$\dfrac{120}{5}$

(24)

11→ Write an expression that contains addition and multiplication where we would do the addition first.

$(3+4) \times 3$

12→ Insert a pair of parentheses to make a TRUE statement

$16 + (8 + 2) \div 2 + 1 = 22$

$16 + 10 \div 2 + 1$

$16 + 5 + 1$

$21 + 1$

(22)

13→ Write a "story"

$50 - [2(8+7) + 9]$

$50 - [2 \times 15 + 9]$

$50 - (30 + 9)$

$50 - 39$

(11)

I am a ware house. At the start of the day, I had 50 boxes. 2 trucks then came in. They both took the same order, which was 8 of 1 type of box and 7 of another type of box. Another truck came in. He only picked up 9 boxes. After the 3 trucks came, how many boxes do I have now?
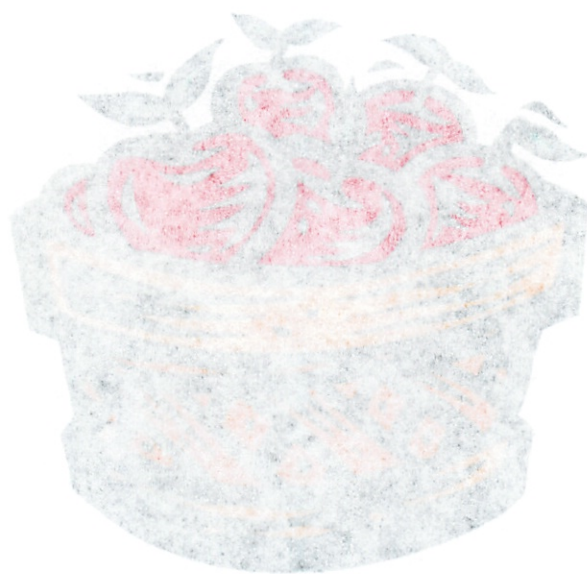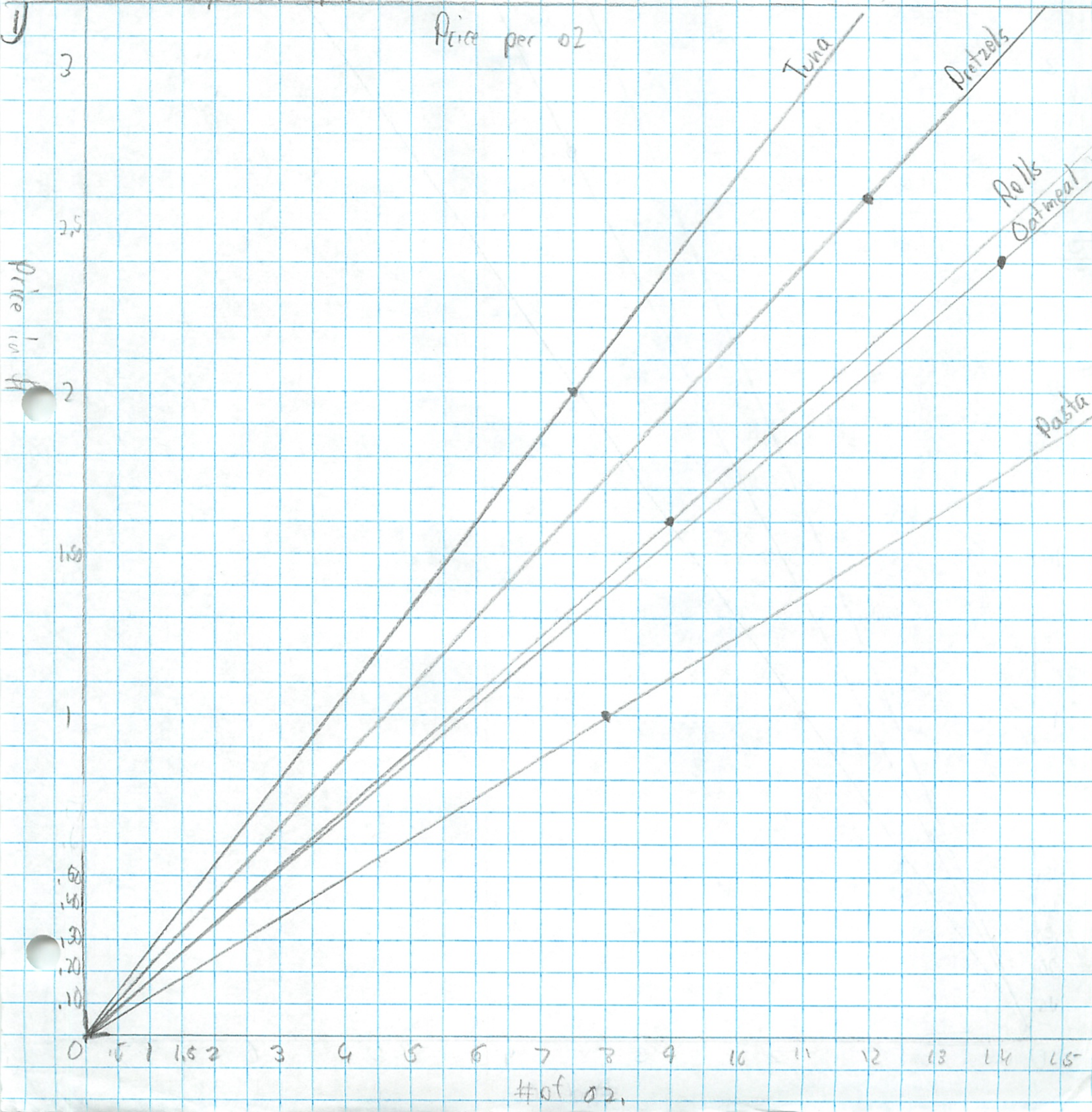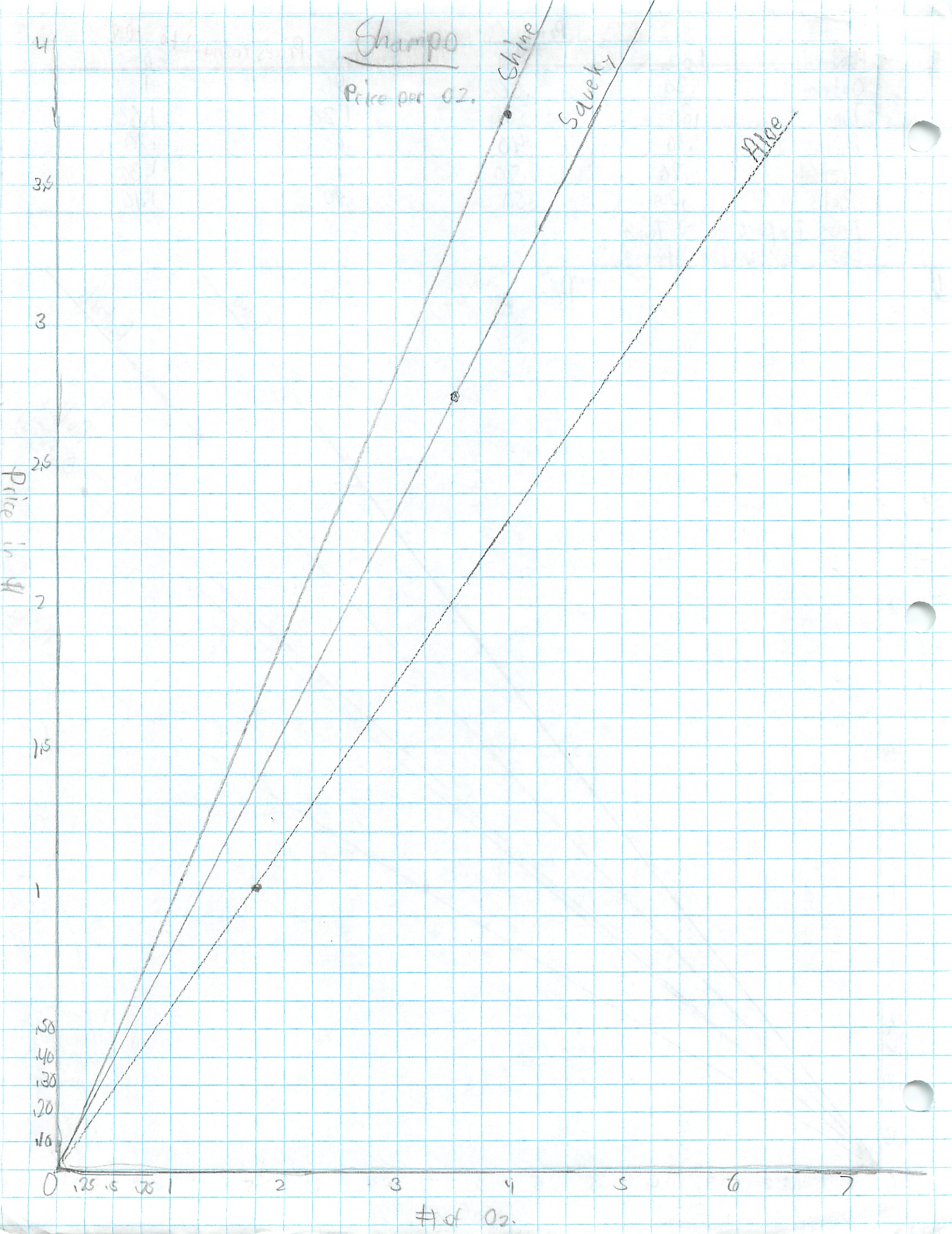
Math

Buyer
Beware

② Prices rounded to 10¢

Product	1 oz	3 oz	4.5 oz	6 oz
Oatmeal	.20	.68	.96	1
Tuna	1.30	.80	1.20	1.68
Pasta	.10	.40	.60	.70
Pretzels	.20	.70	1	1.30
Rolls	.20	.50	.90	1.10

③ Most Expensive → Tuna
Least Expensive → Pasta

④

Price per oz

Tuna   Pretzels

Rolls
Oatmeal

Pasta

Price in $

# of oz

Shampo

Price per oz.

Shine

Squeeky

Aloe

Price in $

# of oz.

Price per oz.

Beef → Pasta → Bozzy Tuna →

Make sure long enough

Bessy's Pancake → Crunchy Crackers →
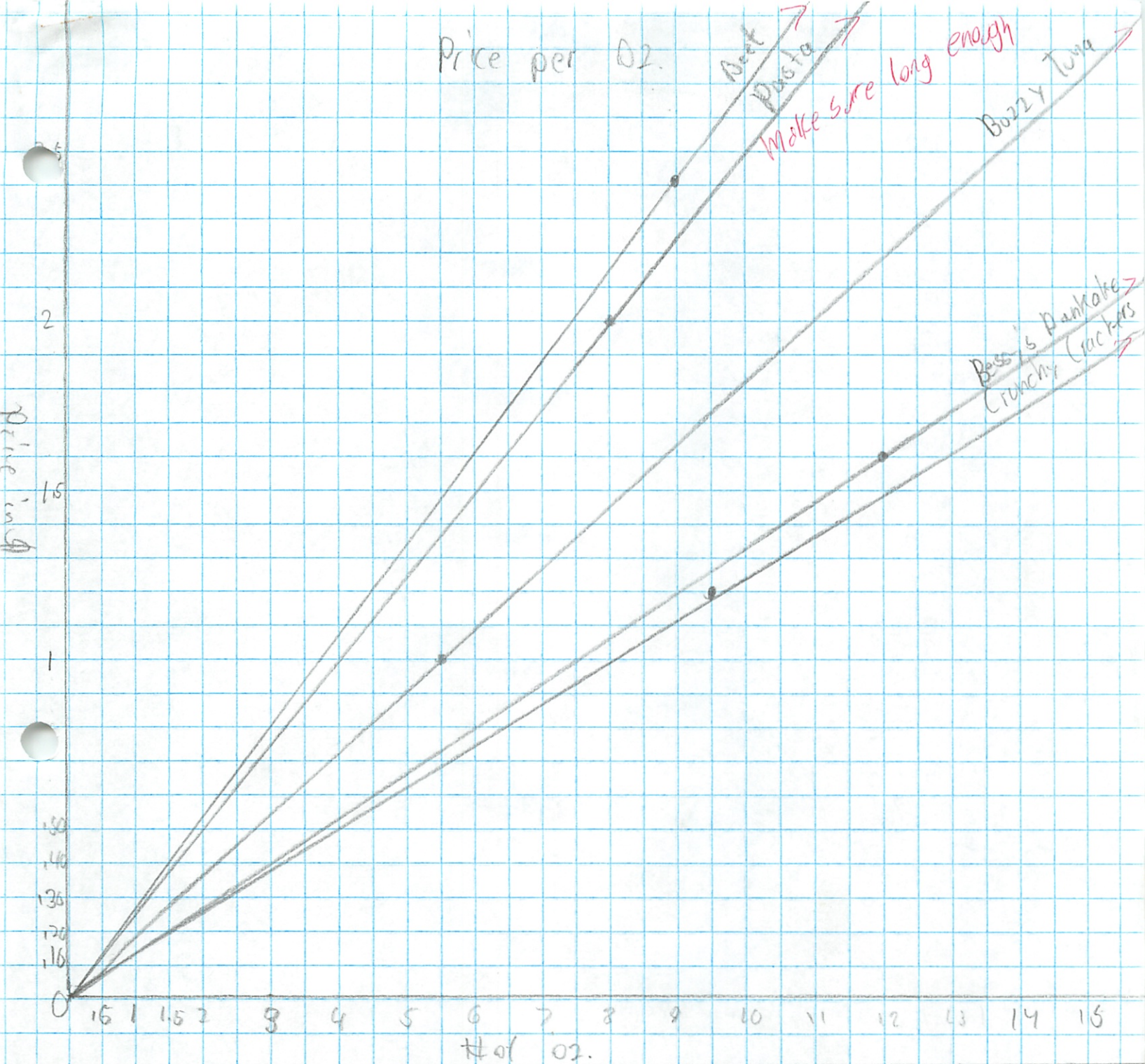
Product	# of Units	Price
Crunchy Crackers	9.5 oz	$1.20
Bozzy Tuna	5.5 oz	$1.00
Bessy's Pancake Mix	12 oz	$1.60
Pino's Pasta	8 oz	$2.00
Beef	9 oz	2.40

1. 5 oz - Crackers → 60¢
2. 1 oz - Tuna → 20¢
3. 2 oz - Pancake → 30¢
4. 14 oz - Pasta → $3.50
5. 15 oz - Beef → $4

Price rounded to nearst 10¢

Don't round on quiz.
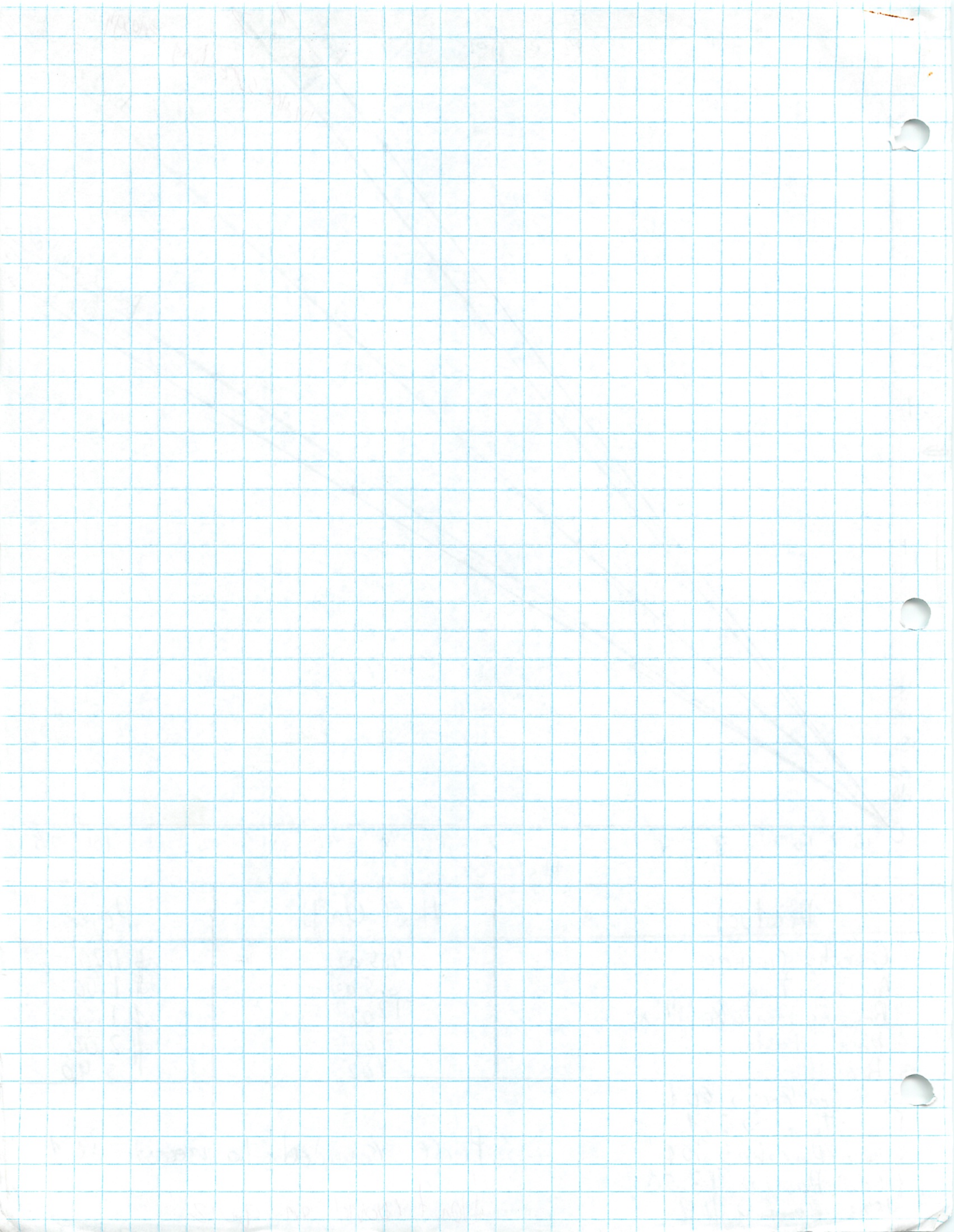
$\frac{34}{36}$ $\frac{17}{18}$ ★

Quiz -- Price Graph   Name: _Michael Plasmeier_

1)   Construct a price graph (on graph paper) using the following data:

Chips	9-oz	$1.00
Pretzels	12-oz	$1.50
Crackers	7-oz	$1.25
Doritos®	8.5-oz	$1.25

2)   Use your price graph to answer the following questions:

What is the price of 8-oz of pretzels?   _$1_

What is the price of 1-oz of Doritos?   _13¢_

What is the price of 12-oz of Crackers?   _$2.14_

I found 6oz price and 2x it

over →

3) Use your calculator to find the unit price (price of 1 oz) of each product. Be sure to show process.

Chips   9-oz $1.00
Pretzels   12-oz $1.50
Crackers   7-oz $1.25
Doritos®   8.5-oz $1.25

Price per oz =	Chips	Pretzels	Cracker	Doritos®
Pack Price / Pack Weight	$1.00 / 9 oz	$1.50 / 12 oz	$1.25 / 7 oz	$1.25 / 8.5 oz
Calc Answer	0.111	0.125	0.178	0.147
Price	12¢/lbs oz	13¢/lbs oz	18¢/lbs oz	15¢/lbs oz

Chips   _12¢/lbs_

Pretzels   _13¢/lbs_

Crackers   _18¢/lbs_   02.

Doritos®   _15¢/lbs_

Price per oz.

Price in $

Crackers

Doritos®

Pretzels

Chips

2
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1
.90
.80
.70
.60
.50
.40
.30
.20
.15
.10
.05

0 .5 1 1.5 2 3 4 5 6 7 8 9 10 11 12 13 14 15

# of oz
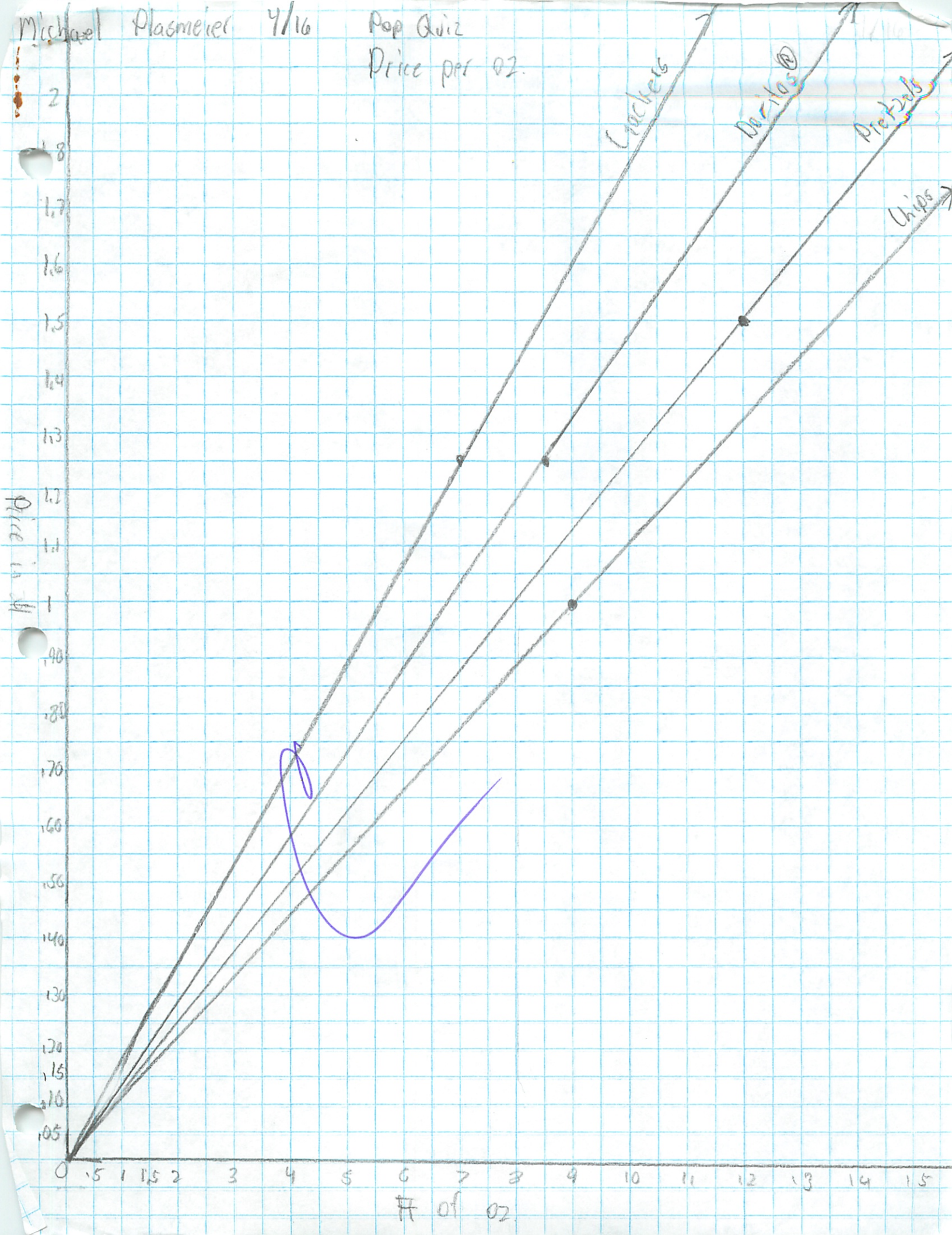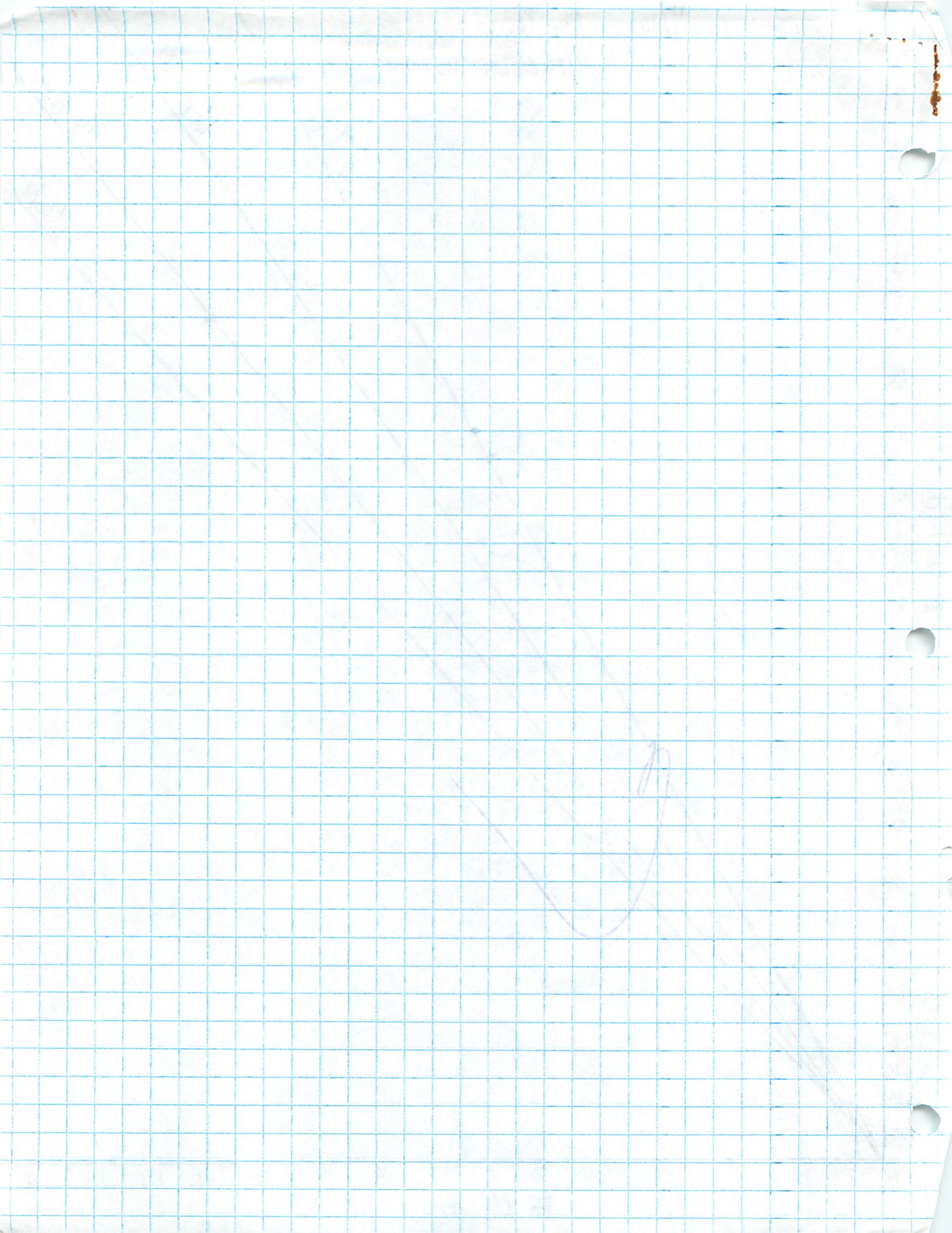
Write each decimal shown in number form and in word form.
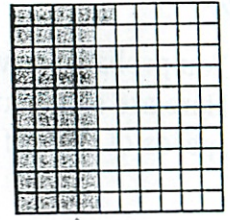
1. _.3_
three tenths

2. _0.05_ (five four hundredths)

3. _1_
one
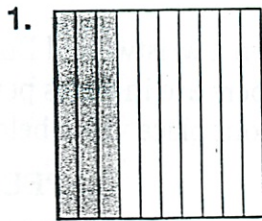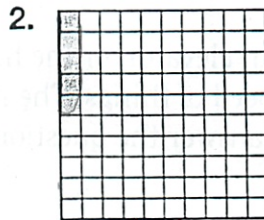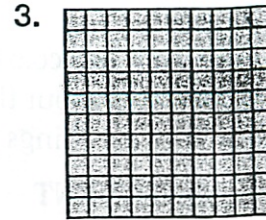
_0.41_
forty one hundredths

Write each number as a decimal.

4. six hundredths _.06_

5. six tenths _____

6. six thousandths _.006_

7. fifteen ten-thousandths _____

8. fifty and four tenths _50.4_

9. four and six hundredths _____

10. one hundred eight and ninety-five hundredths _108.95_

11. two thousand four hundred seventy-five and one tenth _2475.1_

12. nine and four thousand one hundred twelve ten-thousandths _9.4112_

13. ninety-one and three hundred seven thousandths _____

14. nine hundred sixty-eight thousandths _0.968_

Find each answer.

15. How many tenths are in 1 one? _10_

16. How many hundredths are in 1 tenth? _10_

Decimil

ReView

AMAZING SPEED FACTS

You probably never timed a roller coaster, an elevator, or the hand on a wristwatch! But somebody has! Here are some surprising facts about the speed of things. The numbers are in miles per hour. Read the speeds of each of these unusual things and answer the questions about place value below each fact.

STATEMENT	SPEED (mph)
1. The tip of a ⅓ inch long hour hand on a wristwatch. a. What is the place-value position of the 2? _millionth_ b. What is the place-value position of the 7? _ten millionth_ c. What is the place-value position of the 5? _hundred millionth_	**0.00000275** THT TTHT MTMMM
2. The average ground speed of the three-toed sloth. a. What is the place-value position of the 8? _thousandths_ b. What is the place-value position of the 9? _hundrths_	**0.098**
3. A brisk walking pace for a human. a. What is the place-value position of the 5? _____ b. What is the place-value position of the 7? _____ c. What is the place-value position of the 3? _____	**3.75**
4. The average speed of Roger Bannister during his 4-minute mile. a. What is the place-value position of the 1? _tens_ b. What is the place-value position of the 5? _ones_	**15**
5. The fastest passenger elevator. What is the place-value position of the 7? _____	**22.72**
6. The Beast roller coaster at King's Island. What is the place-value position of the 4? _ohes_	**64.77**
7. The fastest bird in level flight, the white-throated spine-tailed swift. What is the place-value position of the 5? _____	**106.25**
8. Speed of ball in world's fastest recorded pitch by Nolan Ryan on August 20, 1974. What is the place-value position of the 9? _tenths_	**100.9**
9. The speed reached by the space shuttle Columbia on its first flight approximately 9 minutes after takeoff. What is the place-value position of the 7? _____	**16,700**
10. The speed of light. What is the place-value position of the 7? _ten thousandsths_ _millions_	**670,251,600** M T O

Use >, <, or = to compare each pair of numbers.

1. 0.4 ◯ 0.6

2. 2.46 ⊘ 2.41

3. 9.83 ◯ 9.831

4. 0.5 ⊘ 0.416

5. 0.387 ◯ 0.378

6. 4.8 ◯ 4.83

7. 12.75 ◯ 12.749

8. 5.03 ⊘ 5.030

9. 23.65 ◯ 22.66

10. 7.382 ◯ 7.823

11. 89.6 ⊘ 89.06

12. 5.36 ⊘ 6.35

Order from least to greatest.

13. 0.4, 0.7, 0.3

_____

14. 5.68, 5.73, 5.51

5.51, 5.68, 5.73

15. 21.6, 21.006, 21.06

_____

16. 1.88, 0.888, 1.8

0.888, 1.8, 1.88

17. 8.23, 8.132, 8.123, 8.213

_____

18. 6.57, 5.68, 5.67, 5.87

5.67, 5.68, 5.87, 6.57

Find each answer.

19. Order the names of the cities shown in the table from the city with the greatest amount of rainfall to the city with the least amount of rainfall.

_____

20. Indianapolis had 1.193 meters of rainfall. After which city in your list would you put Indianapolis?

Atlanta

Rainfall (recent year)	
City	Rainfall
Atlanta	1.172 m
New York	1.237 m
Seattle	1.119 m

TEST PREP

21. Which list shows numbers in order from least to greatest?

Skill 3

A 2.3, 2.03, 2.033

B 2.03, 2.033, 2.3

C 2.3, 2.033, 2.03

D 2.033, 2.3, 2.03

22. Which is 1.042 written in words?

Skill 1

F one and forty-two hundredths

G one forty-two thousandths

H one and forty-two thousandths

J one thousand forty-two

3

HIGH-SPEED RECORDS

Mile runners have recorded some incredibly fast speeds—and every year, they try to break the records with faster speeds. These are some of the times for the 1 mile race recorded between the years 1973 and 1981. Rank these times from the fastest to the slowest (fastest being 1, slowest being 9).

Date	Year	Time (minutes)	Place	Rank
31 Aug.	1979	3:49.5	Crystal Palace	____
25 July	1973	4:00.0	Motspur Park	____
26 Aug.	1979	3:49.57	Crystal Palace	____
17 July	1974	3:59.4	Haringey	____
1 July	1980	3:48.82	Oslo	____
30 June	1975	3:57.001	Stockholm	____
20 Sept.	1978	3:52.8	Oslo	____
26 June	1977	3:54.69	Crystal Palace	____
28 May	1977	3:56.201	Belfast	____

In 1912, Hannes Kolehmainen set the first 5000 meter world record with a time of 14:36.6 minutes. On the graph below, plot the points for the following times and connect them for the men's 5000 meter race.

Year	Time (min.)
1932	14:16.9
1939	14:08.8
1942	13:58.19
1955	13:40.599
1965	13:34.8

TIME IN MINUTE AND SECONDS

15:00

14:00

13:00

1930 '35 '40 '45 '50 '55 '60 '65 '70

4

Give the place value of the underlined digit. Then round the number to this place value.

1. 42.4

_____

_____

2. 7.7961

tenths

7.8

3. 96.08

tenths

96.1

4. 1.881

hundreths

1.89

5. 20.993

_____

_____

6. 13.2043

thousandths

13.204

Round to the underlined place value.

7. 27.27

_____

8. 191.85

191.9

9. 796.301

_____

10. 7.094

7.1

11. 298.99

_____

12. 0.555

0.6

13. 0.6921

_____

14. 409.7

410

15. 0.607

_____

16. 1.009

1.01

17. 33.255

_____

18. 1.02479

1.0248

19. 3.042

_____

20. 8.1919

8.19

21. 50.96

_____

22. 71.6

72

Marc said that to the nearest dollar, he spent $15.00 on a CD. Find each answer.

23. What is the least amount that Marc could have spent?

14.58

24. What is the greatest amount that Marc could have spent?

15.49

5

WELL-ROUNDED ATHLETES

Many athletes are famous for one professional sport, such as baseball, football, or basketball, but they also participate in other sports. Read about these athletes and their other famous accomplishments.

_74.6 m_ 1. Terry Bradshaw (professional football player) set a high-school javelin record of 74.64 meters in 1966. Round his javelin distance to the nearest tenth.

10 sec 2. Herschel Walker (professional football player) was an outstanding sprinter. He sprinted 10.10 seconds for 100 m in 1982. Round his time to the nearest whole number.

_7.6 m_ 3. Gale Sayers (professional football player) was ranked third in the world junior long jump in 1961 with a jump of 7.58 m. Round his record to the nearest tenths place.

_8 m_ 4. Jackie Robinson (professional baseball player) headed the world long jump ranking in 1938 with 7.78 m. Was his jump closer to 7 or 8 meters?

_2.0 m_ 5. Wilt Chamberlain (professional basketball player) was a successful high jumper. His best jump was 1.99 meters. Round his record to the nearest tenth.

Round the following decimals to the underlined place-value positions.

6. 7.3<u>5</u>   _7.4_

7. 5.9<u>8</u>6   _____

8. <u>8</u>.981   _7_

9. 0.1<u>4</u>   _____

10. 41.0<u>6</u>4   _41.7_

11. 9.<u>6</u>5   _9.7_

12. 400.0<u>5</u>8   _480.1_

13. 0.1<u>7</u>1   _____

14. 2.6<u>5</u>43   _2.65_

15. 17.<u>9</u>76   _____

16. 4.9<u>9</u>3   _4.99_

17. 0.0<u>1</u>81   _____

18. 45.<u>8</u>7   _45.9_

19. 432.<u>9</u>87   _____

20. 87.1<u>2</u>45   _87.12_

6

Estimate by first rounding to the nearest whole number. *Read*

1. 30.2
   + 15.5

2. 99.7
   + 60.22

3. 4.216
   + 8.19

4. $ 59.11
   + 37.95
   97.06 – $97

5. 19.5
   − 0.68

6. 20.35
   − 14.527

7. 48.32
   − 6.1

8. $ 62.29
   − 9.75
   $ 2.44 – $52

9. 3.9 + 35.4 _____

10. 78.03 − 10.4 _____   *47.30*

11. 88.4 + 5.2 + 6.7 _____

12. 47.3 + 8.92 + 2.0 *58.22 →58* *8.92 2.00 58.22*

13. $71.94 − $4.28 _____

14. $88.40 + $8.55 _____

15. 37.941 − 13.07 _____

16. $147.80 − $104.50 *43.30 – $43* *147.80 104.58*

17. 5.6 + 13.1 _____

18. 30.3 + 21.7 _____   *(15) 45.30*

19. 3.7 − 0.81 _____

20. $19.25 − $3.95 *16.30 ← ✗*   *19.25 −3.95 16.30*

21. 17.012 − 1.8 _____

22. 65.75 + 13.02 _____

23. 18.65 + 2.3 _____

24. 31.26 + 0.995 *31.265 –)✗✗*   *31.260 .995 31.265*

   (32)

25. $1.99 + $3.40 + $ 3.88 + $0.97 _____

Solve.

26. Estimate the cost of a ball and a bat. _24_

27. Estimate the cost of shoes and a glove. _50_

28. Kim paid for a ball with a $20 bill. Estimate how much change she received. _11.11_

Baseball Equipment	
Shoes	$29.75
Bat	$16.49
Ball	$8.89
Glove	$19.19

20.00
− 8.89
1?.21

8.89
19.11
90

2000
− 8.89
1,1,1,1

7

Add.

1. 0.6
    + 0.3
    ___

2. 0.9
    + 0.7
    ___
    .6

3. 2.9
    + 0.8
    ___

4. 1.08
    + 0.06
    ___
    1.14

5. 6.4
    + 9.8
    ___

6. 82.07
    + 3.20
    ___
    85.27

7. 8.37
    + 1.98
    ___

8. 1.020
    + 0.876
    ___
    1.896

9. 42.9
    + 7.463
    ___

10. 1.806
    + 4.290
    ___
    6.096

11. 10.8
    + 12
    ___

12. 13.8
    + 8.6
    ___
    22.4

13. 75.452
    + 82.7
    ___

14. 13.06
    + 3.904
    ___
    16.964

15. 6.256
    + 1.498
    ___

16. 43.007
    + 18.404
    ___
    61.411

17. 0.5 + 0.5 = ___1___

18. 2.05 + 5.08 = __7.13__

19. 50.5 + 8.176 = _____

20. 17.84 + 9.217 = __17.057__   17.84
                                  9.217
                                 _____
                                 17.057

21. 0.6 + 9.75 + 11 = _____

22. 18.20 + 43.39 = __61.59__   18.70
                                43.39
                               _____
                               61.59

23. 0.25 + 4.086 = _____

24. 1.75 + 2.39 + 6.56 = __10.70__

25. 8.91 + 11.4 + 0.006 = _____

26. 3.618 + 4.021 + 9 = __16.639__   4.021
                                     9
                                   1.75
    16.639   2.39
                                   6.56

Solve.

The times for two teams in a 400-meter relay
are shown in the table.

27. What was the total time for Team A? __6.93 min__

28. What was the total time for Team B? __6.95 min__

29. Which team won the relay? __Team A__

400-Meter Relay		
Team	1st 200 m	2nd 200 m
Team A	2.92 min	4.01 min
Team B	3.00 min	3.95 min

2.92   3.00
4.01   3.95
____   ____
6.93   6.95

Subtract.

1. 9.8
− 7.8

2. 47.09
− 36.00
11.09

3. 8.25
− 6.62

4. 65.42
− 41.60
23.82

5. 3.421
− 0.409

6. 9.300
− 4.546
4.754

7. 62.04
− 29.004

8. 18.902
− 6.604
12.298

9. 15.306
− 8.73

10. 14.300
− 3.429
10.871

11. 63.48
− 53.7

12. 37.490
− 33.922
3.568

13. 16 − 15.86 = _____

14. 21 − 3.38 = 17.62   21.00
                          − 3.38
                          17.62

15. 91.96 − 90.97 = _____

16. 12.004 − 4.873 = 7.131   17.62   12.004
                                          − 4.873
                                          7.131

17. 49.071 − 20 = _____

18. 18.20 − 9.54 = 8.66   18.20
                            − 9.54
                            8.66

19. 74 − 15.473 = _____

20. 52 − 6.091 = ~~46.044~~   45.909

52.000
− 6.091
46.009

Solve.

21. You buy a CD for $12.99. You pay with a $20 bill. How much change should you get back? _____ $7.01

20.00
− 12.99
7.01

22. The diagram shows the total length of the Mackinac Bridge, including the two approaches. What is the length of the main (middle) span of the bridge?
1.158 km

0.549 km   ? km   0.549 km
              2.256 km

2.256
− .549
1.767
− .549
1.158

9
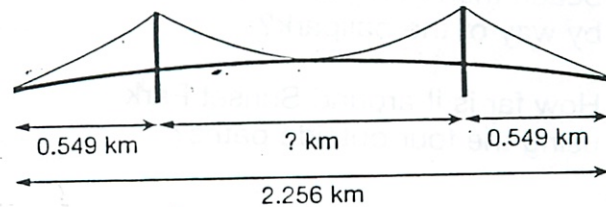
Solve each problem.

The table shows record catches for freshwater fish.

1. What is the difference between the weight of the trout and the weight of the whitefish?   .125 lbs

2. How much more did the bass weigh than the catfish?   3.375 lbs

Record Fish Weights	
Largemouth Bass	22.25 lb
White Catfish	18.875 lb
Sockeye Salmon	15.1875 lb
Brook Trout	14.5 lb
Lake Whitefish	14.375 lb

3. Brian caught three brook trout that weighed 4.8 pounds, 3.54 pounds, and 2.71 pounds. What was the total weight of the three fish?   11.05 lbs

4. How much more did the record brook trout weigh than the three trout that Brian caught?   3.45 lbs

```
 14.500        22.250
 14.375      -18.875
  .125         3.375

   2
  4.8 6        14.50
  3.54       -11.05
 +2.71         3.45
 ──────
 11.05
```
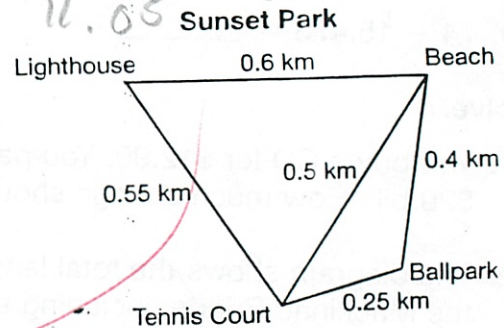
Use the map at the right.

5. How far is it from the tennis court to the beach by way of the ballpark?   1.65 km

6. How much shorter is the direct path from the tennis court to the beach than going to the beach by way of the ballpark?   .15 km

7. How far is it around Sunset Park using the four outside paths?   1.8 km

Sunset Park

Lighthouse — 0.6 km — Beach

0.55 km   0.5 km   0.4 km

Ballpark

Tennis Court   0.25 km

Remember if you have 1.801 km to round to hundredths write 1.80 km

```
 .55
 .6
 .4
+.25
─────
1.8
```

.8

TAKE TO THE SLOPES

Felipe, Raji, and Jim are taking to the ski slopes for the first time this year. Solve these problems to find out how much it costs to have fun in the snow. (Find the group's expenses.)

_____ 1. If ski boots cost $194.47, skis cost $327.28, and poles cost $65.79, how much is Felipe planning to spend if he purchases instead of rents his equipment?

_____ 2. Felipe's dad has given him $350 to spend on boots, skis, and poles. How much money will Felipe need to withdraw from his savings account to buy the equipment that he wants?

_____ 3. Raji is planning the transportation and lodging for the trip. If the round-trip airfare will be $341.93 each and three nights' stay at the motel will cost each boy $121.05, how much should each boy budget for his flight and motel room?

_____ 4. Jim is investigating renting his ski equipment. The first 2 days he is planning to ski, so he will need to rent boots for $10.87 and skis and poles for $15.46 a day. How much will his first 2 days' rental fees total?

_____ 5. The third day Jim plans to snow board. The boards rent for $8.25 an hour, and the boots rent for another $2.00 an hour. Lessons are $33.80 an hour. And he needs a lesson! He decides to snow board for 5 hours and, in that time, get a 1-hour lesson. He also must pay $35 for a lift ticket. How much will his third day on the slopes cost?

The boys plan to eat snacks at the lodge during the day to keep up their strength for skiing the slopes. Here are the prices on some typical snack foods at the lodge (tax is included).

MOUNTAIN VIEW LODGE MENU

PIZZA SLICE	$.2.73	NACHOS	$1.06
SOFT DRINK	0.85	PICKLE	0.88
FRENCH FRIES	1.17	COOKIES	0.95
GRILLED CHEESE	1.72	HOT DOG	1.98
BROWNIE	1.42	CHIPS	0.66
BAGEL	1.24	NOODLE SOUP	1.59
HOT CHOCOLATE	0.95	OATMEAL	1.31
		SPRING WATER	1.08

_____ 6. Raji orders a pizza slice, nachos, cookies, and a soft drink. How much will his total be?
_____   If he pays with a $10 bill, how much will his change be?

_____ 7. Felipe orders hot chocolate, oatmeal, and a bagel. What does his
_____   order total and what will his change be if he pays with a $5 bill?

_____ 8. Jim decides to snack on a grilled cheese sandwich with noodle soup, spring water, pickle, chips, and a brownie. What is his total
_____   food bill and what is his change from a $20 bill?

Estimate each product. Round to make the computation easy.

1. 6.43×8.7
   ↓   ↓
   ___ × ___ = ___

2. 34.5×9.6
   ↓   ↓
   ___ × ___ = ___

3. 3.07×1.85
   ↓   ↓
   ___ × ___ = ___

4. 93.9×0.4
   ↓   ↓
   ___ × ___ = ___

5. 0.49×5.1
   ↓   ↓
   ___ × ___ = ___

6. 106.9×0.008
   ↓   ↓
   ___ × ___ = ___

7. 9.832×6.5 4.63 × 9
   ___

8. 14.3×7.08 7.746   6.2

9. 22.049×3.27 317 × 4   12 6.8

10. 4.63×0.9 41.67   6.15   4,167   999

11. 6.2×7.746 15 492   464 940   48.0232   486432   13.6526

12. 317×0.4 126.8   .083   7

13. 6.15×99.9 5535   614,385   55 350   55 3500

14. 0.609×21.4 .609   21.4   Did Wrong one   2436   609   1218   13.8326

15. 7×0.083 0.581

16. 0.9×7.9 614,38 5

17. 32.1×4.8 2436   609 0   1218 00   13.8326   2 6

18. 105.2×3.8

A light-year is the distance light travels in a year. It is about 9.5 trillion kilometers. Use this information to answer each question.

19. Alpha Centauri C is about 4.3 light-years from Earth. Estimate this distance in trillion kilometers.
    (Hint: Estimate 4.3×9.5.)   _____

20. Sirius is about 8.6 light-years from Earth. Estimate this distance in trillion kilometers.   _____

12

Place a decimal point in each product.

1. $12 \times 8.76 = 1\,0\,5.1\,2$ 2. $4.67 \times 7 = 3\,2.6\,9$ 3. $8 \times 17.6 = 1\,4\,0.8$

4. $2.831 \times 3 = 8.4\,9\,3$ 5. $0.236 \times 21 = 4.9\,5\,6$ 6. $3.375 \times 8 = 2\,7.0\,0\,0$

Multiply.

7. $0.4 \times 6 = 2.4$

8. $0.39 \times 3 = 1.17$

9. $0.12 \times 7 = 0.84$

10. $8.3 \times 6 = 49.8$

11. 0.208×24
832
+4160
4992 → 4.992

12. 1.022×15
5110
10220
15330 → 15.330

13. 3.7×65
186
2220
2405 → 240.5

14. 0.52×26
312
1040
1352 → 13.52

15. $324 \times 0.28 = 90.72$

16. $\$25.98 \times 12 = 311.76$

17. $1.65 \times 10 = 16.5$

18. $8.111 \times 9 = 72.999$

19. $18 \times 14.1 = 253.8$

20. $6 \times 3.422 = 20.532$

21. $\$1.02 \times 60 = 61.20$

22. $9 \times 200.4 = 1803.6$

Solve.

23. The Beast, a roller coaster in Cincinnati, Ohio, is 1.4 miles long. How far would you travel in 5 rides? ___7 miles___

24. The Dragon King in Salou, Spain, has a track that is 0.789 mile long. How far would you travel in 3 rides? ___2.367 miles___

1.4
× 5
7.0

.789
× 3
2367

13

Multiply.

1. $10 \times 0.5 =$ _____

2. $100 \times 0.05 =$ _____

3. $1,000 \times 0.005 =$ _____

4. $10 \times 0.67 =$ _____

5. $100 \times 0.67 =$ _____

6. $0.67 \times 1,000 =$ _____

7. $1,000 \times 3.42 =$ _____

8. $100 \times 45.6 =$ _____

9. $3.65 \times 1,000 =$ _____

10. $0.5713 \times 100 =$ _____

11. $0.008 \times 10 =$ _____

12. $8.9 \times 10 =$ _____

13. $10 \times 3.657 =$ _____

14. $0.06 \times 1,000 =$ _____

15. $1.12 \times 10 =$ _____

16. $0.4671 \times 1,000 =$ _____

17. $1,000 \times 0.001 \times 0 =$ _____

18. $100 \times 0.01 \times 100 =$ _____

19. $3.261 \times 1,000 =$ _____

20. $10 \times 0.004 =$ _____

21. $58.02 \times 100 =$ _____

22. $1,000 \times 7.2 =$ _____

23. $10 \times 0.389 =$ _____

24. $65.2 \times 1,000 =$ _____

Solve.

25. A baseball must weigh between 5 ounces and 5.25 ounces. Ten baseballs would weigh between _____ ounces and _____ ounces.

26. A tennis ball must weigh between 2 ounces and 2.065 ounces. Ten tennis balls would weigh between _____ ounces and _____ ounces.

27. A football must be at least 10.875 inches long. What is the shortest total length of 100 of these footballs laid end to end? _____

14

Place a decimal point in each product.

1. $3.7 \times 19.8 = 73.26$ 2. $5.7 \times 19.9 = 113.43$ 3. $2.9 \times 13.82 = 40.078$

4. $10.2 \times 9.49 = 96.798$ 5. $12.14 \times 8 = 97.12$ 6. $0.02 \times 378.3 = 7.566$

Multiply. Estimate to check your answer.

7.
```
  50.9
×  0.9
 45.88
```

8.
```
  0.91
×  0.2
 0.182
```

9.
```
  9.031
×   0.5
 4.5155
```

10.
```
  0.36
×  0.7
0.252
```

11.
```
  0.678
×   1.2
  1356
  6780
 0.8136
```

12.
```
   9.2
×  0.25
  .460
 +1840
 2.300
```

13.
```
   5.6
×  4.8
  448
 2240
26.88
```

14.
```
  12.52
×   1.6
  7512
 12520
 20.032
```
coping mistake

15. $55.5 \times 0.7 = \underline{38.85}$

```
 55.5
  .7
 38.85
```

16. $1.02 \times 0.6 = \underline{0.612}$

```
 1.02
  .6
 .612
```

17. $61.4 \times 0.5 = \underline{30.7}$

```
3885   30.7 0
```

18. $0.9 \times 200.4 = \underline{180.36}$

```
  200.4
×   .9
 180.36
```

19. $3.3 \times 38.8 = \underline{128.04}$

```
 38.8
 ×3.3   3×3=9
 1864
11640
128.04
```

20. $4.7 \times 8.12 = \underline{38.164}$

```
  8.12
× 4.7
 5684
32480
38.164
```

Solve. Remember that to find the area of a rectangle, you multiply the length by the width.

21. A rectangular park is 1.5 miles long and 1.2 miles wide. Find the area in square miles. $\underline{1.8 \ mi^2}$

22. A square floor tile measures 4.5 centimeters on each side. Find the area of the tile in square centimeters. $\underline{20.25 \ cm^2}$

```
  1.5
× 1.2
   30
  150
 1.80
```

```
   4.5
 × 4.5
   226
  1800
 20.25
```

15

Find each product.

1. 0.028
   × 0.7

2. 1.83
   × 0.004

3. 0.0102
   × 0.045

4. 4.12
   × 0.0043

5. 2.3
   × 0.015

6. 0.17
   × 0.03

7. 0.45
   × 0.08

8. 0.098
   × 0.032

9. 0.035
   × 0.09

10. 2.34
    × 0.0005

11. 0.111
    × 0.04

12. 6.73
    × 0.011

13. $0.3 \times 0.002 = $ _____

14. $0.3 \times 0.2 = $ _____

15. $0.003 \times 0.02 = $ _____

16. $12 \times 0.0005 = $ _____

17. $0.09 \times 0.03 = $ _____

18. $0.07 \times 1.1 = $ _____

19. $0.003 \times 0.6 = $ _____

20. $1.003 \times 0.007 = $ _____

21. $0.67 \times 0.01 = $ _____

22. $2.3 \times 0.0003 = $ _____

Solve.

23. A pen costs $.75. Sales tax is 0.08 times the
    cost of the pen. How much sales tax will be paid? _____

16

Solve each problem.

1. Use the Healthy Hamburger Menu on the previous page. How much would a deluxe hamburger with cheese, a salad, and a beverage cost?

   $15.75

2. Lauren earns $4.50 an hour babysitting. How much will she earn in 3.5 hours?

   $13.75

3. How much change did Aaron get if he paid for a $6.25 movie ticket with a $20 bill?

   $13.75

4. Fines for overdue books at the Maple Park Library are $.08 a day. What is the fine for a book that has been overdue for 14 days?

   $1.12

5. Apples are on sale for $.85 a pound. How much would 2.5 pounds of apples cost? Round your answer to the nearest cent.

   $2.13

6. Ms. Ryder bought a birthday present for $18.75, a card for $1.98, and wrapping paper for $2. How much did she spend?

   $22.73

7. A CD was marked $12.50, but with sales tax it cost $13.56. How much was the sales tax?

   $1.06

8. Mr. Kenny bought 8.2 gallons of gasoline that cost $1.489 per gallon. How much did he pay for the gasoline? Round your answer to the nearest cent.

   $12.21

9. Randy has a coupon for $.50 off the rental of a video. How much would he pay for a video that rents for $2.49?

   $1.99

10. How much do you save by buying a 24-ounce box of corn flakes instead of two 12-ounce boxes?

    $.43

    $2.11   12 oz   Corn Flakes

    $3.79   24 oz   Corn Flakes

(handwritten work)

4.56
×3.5
2260
13500
13,750

15.75

13.75

20.00
−6.25
13.75

.85
×2.5
125
170
2.125

2.13

18.75
1.98
2.00
22.73

13.56
−12.50
1.06

1.489
×8.2
2978
129120
13.2098 → 13.21

2.49
−.50
1.99

4.22
13.79
.43

SPRINGBOARD TO DECIMALS

Melissa and Tom are on the diving team at Rocky Top School. They specialize in the 3-meter spring-board competitions. Today they will be competing against Tina and John of Challenger School. Their dives will be rated on a scale of 0 to 10 by a panel of five judges. The highest and lowest scores will be deleted. The sum of the three remaining scores will be multiplied by the degree of difficulty for the dive as assigned by FINA (Federation Internationale de Natation Amateur) diving rules and upheld by United States Diving, Inc. Find the divers' final scores using the information below.

Melissa — ROCKY TOP SCHOOL

Name of dive	Scores Used 1	2	3	Sum of 3 Scores	x	Degree of Difficulty	=	Final Score
Back somersault (pike position)	8.1	7.9	8.3	_____		1.8		_____
Forward 1½ somersault (tuck)	8.7	8.8	8.5	_____		1.5		_____
Inward flying somersault (pike)	7.6	7.8	7.5	_____		1.9		_____

TOTAL SCORE = _____

TOM — ROCKY TOP SCHOOL

Name of dive	Scores Used 1	2	3	Sum of 3 Scores	x	Degree of Difficulty	=	Final Score
Inward dive (straight position)	7.7	7.8	8.1	_____		1.7		_____
Forward double somersault (pike)	8.4	8.6	8.9	_____		2.1		_____
Reverse 1½ somersault (tuck)	7.4	7.9	7.6	_____		2.0		_____

TOTAL SCORE = _____

John — CHALLENGER SCHOOL

Dive name	Sum of 3 Scores	Degree of Difficulty	Final Score
Back double somersault (tuck)	22.6	2.0	_____
Inward Flying somersault (pike)	24.7	1.9	_____
Forward triple somersault (tuck)	21.9	2.5	_____

TOTAL SCORE = _____

Tina — CHALLENGER SCHOOL

Dive name	Sum of 3 Scores	Degree of Difficulty	Final Score
Reverse flying somersault (tuck)	23.4	1.8	_____
Forward double somersault (pike)	21.1	2.1	_____
Inward double somersault (pike)	22.8	2.6	_____

TOTAL SCORE = _____

Who had the highest final score? _____

18

Estimate each quotient.

1. 37.16 ÷ 8.7 _____

2. 121.7 ÷ 2.9 _____

3. 14.6 ÷ 6.8 _2.15_

4. 80.1 ÷ 4 _____

5. 515.3 ÷ 56 _____

6. 106.9 ÷ 0.95 _____

7. 245.6 ÷ 59 _____

8. 16.42 ÷ 8 _____

9. 76.7 ÷ 25 _____

10. 271.3 ÷ 9.03 _____

11. 798.6 ÷ 38.5 _____

12. 42.8 ÷ 6.7 _____

13. 13.86 ÷ 2.3 _____

14. 62.1 ÷ 5.8 _10.71_

15. 608.7 ÷ 19 _____

16. 36.1 ÷ 12.2 _____

Use estimation to solve.

17. Lynne bought 12 golf balls for $14.98. Did each golf ball cost more than or less than $1.00? _____

18. The track team paid $179.50 for 9 sweatshirts. About how much did each sweatshirt cost? _____

19. The soccer coach bought 5 packages of socks for $46.25. Each package contained 3 pairs of socks. If he sells the socks to his players for $3.00 a pair, will he lose money? Explain.

_____

19

Divide. Continue dividing until the remainder is 0.

1. $5\overline{)6.85}$ 2. $3\overline{)13.68}$ 3. $4\overline{)13}$ 4. $8\overline{)52}$

5. $3\overline{)15.39}$ 6. $6\overline{)404.4}$ 7. $5\overline{)10.95}$ 8. $6\overline{)28.5}$

9. $40\overline{)30}$ 10. $15\overline{)61.65}$ 11. $22\overline{)165}$ 12. $65\overline{)240.5}$

13. $109.5 \div 75 = $ _____

14. $127.35 \div 45 = $ _____

15. $26.45 \div 23 = $ _____

16. $42.5 \div 25 = $ _____

17. $79.1 \div 14 = $ _____

18. $9.6417 \div 3 = $ _____

Solve.

19. A 5-pound beef roast costs $9.45. What is the price per pound? _____

20. Sliced turkey costs $4 per pound. How many pounds do you get for $16.20? _____

20

Find each quotient. ~~No Decimals~~

1. 0.07
   $4\overline{)0.28}$

2. $.08$
   $7\overline{)0.56}$ ✗
   ✗ mistake
   $8 \times 7 = 56$

3. 3.009
   $2\overline{)6.018}$ ✗
   ✗ mistake
   $2 \times 9 = 18$

4. 11.008
   $3\overline{)33.024}$ ✗
   remember the 0

5. $.016$
   $6\overline{)0.096}$

6. 3.205
   $5\overline{)16.025}$

7. 3.02
   $24\overline{)72.48}$

8. 2.05
   $41\overline{)84.05}$
   $41\overline{)205}$
   $205 | 5$

(large red "3")

9. $.037$
   $65\overline{)2.405}$
   $-195 | 3\delta$
   455
   $-225 | 5$
   $130 | 2$
   130

10. $.0041$
    $38\overline{)0.1558}$
    $-152 | 4\delta$

11. $.006$
    $22\overline{)0.132}$
    $110 | 5$
    $22 | 1$

12. 0.086
    $25\overline{)2.150}$
    $200 | 80$
    $150 | 6$

13. $1.275 \div 75 = \underline{.017}$

14. $3.35 \div 50 = \underline{0.067}$

15. $0.0135 \div 15 = \underline{.0009}$

16. $18.585 \div 9 = \underline{2.065}$

Solve.

17. A 10.5-inch sausage is cut into 150 slices of the same size. Is each slice greater than or less than 0.1 inch thick? ___less then___

18. A stack of 250 sheets of bakery tissue paper is about 2.5 inches high. About how thick is each piece of tissue paper? ___.01 in___

(scratch work at margins)

13
$75\overline{)1.275}$
$-750 | 10$
525
$375 | 5$
$150 | 2$

$.01$
$250\overline{)2.50}$

$.07$
$150\overline{)10.50}$
$750 | 5$
$300 | 2$

$50\overline{)3.35}$
$-300 | 6$
35

$15\overline{).0135}$
$-90 | 6$
45
$45 | 3$

2.065
$9\overline{)18.585}$

21

Divide.

1. $40.5 \div 100 =$ _0.405_

2. $25 \div 1{,}000 =$ _0.00025_

3. $7.03 \div 100 =$ _0.0703_

4. $0.03 \div 10 =$ _0.003_

5. $983 \div 100 =$ _9.83_

6. $809 \div 1{,}000 =$ _0.809_

7. $4{,}518 \div 100 =$ _45.18_

8. $74.41 \div 10 =$ _7.441_

9. $88.56 \div 10 =$ _8.856_

10. $0.009 \div 10 =$ _0.0009_

11. $0.75 \div 100 =$ _0.0075_

12. $0.57 \div 100 =$ _0.0057_

13. $7.3 \div 1{,}000 =$ _0.0073_

14. $18{,}693 \div 100 =$ _186.93_

15. $2.3 \div 100 =$ _0.023_

16. $320.1 \div 1{,}000 =$ _0.3201_

17. $0.04 \div 100 =$ _0.0004_

18. $58.3 \div 1{,}000 =$ _0.0583_

19. $752.1 \div 10 =$ _75.21_

20. $0.659 \div 100 =$ _____

21. $657 \div 10 =$ _____

22. $0.03 \div 1{,}000 =$ _____

23. $502.3 \div 100 =$ _____

24. $2{,}385 \div 1{,}000 =$ _____

25. $4.9 \div 10 =$ _____

26. $0.8 \div 100 =$ _____

Solve.

Mrs. Hanna paid a total of $59.00 for 10 identical strands of lights to use for a party. The 10 strands contained 1,000 lights in all.

27. How much did each strand of lights cost? _____

28. How much did each light cost? _____

22

Find the average of each set of numbers.

1. 1.6, 2.3, 2.3, 3.8, 2.0 _____

2. 0.33, 0.25, 0.26, 0.32 _____

Solve each problem.

3. The number of students in each homeroom at Lincoln School is 37, 41, 34, 38, 33, and 36. What is the average number of students in each room?

_____

4. The normal monthly precipitation in Baltimore, given in inches, is shown below.

   3.1, 3.1, 3.4, 3.1, 3.7, 3.7,
   3.7, 3.9, 3.4, 3.0, 3.3, 3.4

   Find the average monthly precipitation.

_____

5. Shelly's times, in seconds, for the 100-meter dash were 21.2, 19.8, 22.1, 20.0, and 20.4. What is her average time?

_____

6. Larry bought CDs for $12.98, $15.39, and $8.95. What was the total amount he paid for the CDs?

_____

7. Ms. Kelstat bought milk four times last week. She paid the following for each gallon:

   $3.79, $3.53, $2.09 (on sale), $3.79.

   What was the average price per gallon?

_____

8. Jamie took five tests and had an average score of 95.4. How many total points did she earn?

_____

23

Divide.

1. $0.6\overline{)87}$ 2. $0.06\overline{)87}$ 3. $0.3\overline{)9}$ 4. $0.03\overline{)9}$

5. $0.2\overline{)57}$ 6. $0.8\overline{)10}$ 7. $0.09\overline{)18}$ 8. $0.04\overline{)13}$

9. $0.24\overline{)168}$ 10. $1.2\overline{)15}$ 11. $0.61\overline{)61}$ 12. $0.35\overline{)98}$

13. $771 \div 0.12$ _____

14. $861 \div 8.4$ _____

15. $364 \div 0.56$ _____

16. $75 \div 0.025$ _____

Solve. Refer to the table.

17. How many $.33 stamps can you buy for $33? _____

18. How many $.55 stamps can you buy for $22? _____

19. a. What is the cost to mail a 3-ounce letter? _____

    b. How many 3-ounce letters can you mail for $8? _____

Postal Rates for Letters	
1-ounce or less	$.33
Each additional ounce	$.22

Divide.

1. 9 (above) $0.7\overline{)6.3}$

2. 0.2 (above) $0.9\overline{)0.18}$

3. $.8$ (above) $0.6\overline{)0.48}$

4. 1.4 (above) $0.8\overline{)1.12}$

5. $0.16\overline{)2.56}$

6. $0.36\overline{)0.288}$

7. $0.08\overline{)18}$

8. $1.4\overline{)13.86}$

9. $1.7\overline{)10.54}$

10. $2.4\overline{)0.168}$

11. $0.07\overline{)0.035}$

12. $0.96\overline{)0.0192}$

13. $0.35 \div 0.07 =$ _____

14. $0.2068 \div 4.4 =$ _____

15. $0.015 \div 0.05 =$ _____

16. $13.76 \div 3.2 =$ _____

17. $0.441 \div 6.3 =$ _____

18. $0.0602 \div 0.086 =$ _____

Solve.

19. Teri paid $3.06 for apples that cost $.68 a pound. How many pounds of apples did she buy? _____

20. Lin bought 9.2 gallons of gasoline for $12.42 and paid for it with a $20 bill. What was the price of one gallon of gasoline? _____

21. Mr. Smith drove 381.9 miles in 8.5 hours. What was the average number of miles he drove each hour? Round your answer to the nearest tenth of a mile. _____

25

THREE TIMES THE WORK

Mitch and Debbie are preparing to compete in a triathlon. Participants are required to swim, bike, and run. It is considered a grueling test of fitness. Mitch has been jogging and Debbie has been swimming to stay in shape, but they have decided to train in all three events to prepare for the Cherokee Triathlon. Answer these questions about their training. (Remember: rate x time = distance; distance ÷ time = rate; and distance ÷ rate = time.) Round to the nearest hundred.

1. For their training ride, Debbie and Mitch decided to cycle the 12.8 mile course at the City Park. Calculate their rates in miles per hour. (First, change minutes to hours by dividing the minute time by 60. Then divide the distance by the time to find the rate.)
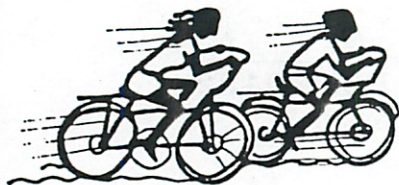
	Time	Time in Hours	Distance	=	Rate (mph)
a. Debbie	26.4 min.	_____	12.8 mi.		_____
b. Mitch	25.7 min.	_____	12.8 mi.		_____

2. Next they went to the pool to check on their swimming rates. They decided to swim 2000 m. (Change meters to miles by dividing by 1609.76.)

	Time	Time in Hours	Distance	=	Rate (mph)
a. Debbie	25.1 min.	_____	_____ mi.		_____
b. Mitch	26.9 min.	_____	_____ mi.		_____
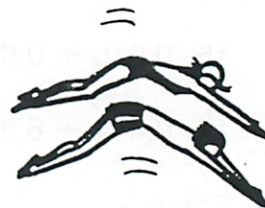
3. The mini-marathon course in their city measures 13.4 miles. Calculate the rates for their running of this course based on their times.

	Time	Time in Hours	Distance	=	Rate (mph)
a. Debbie	66.4 min.	_____	13.4 mi.		_____
b. Mitch	59.8 min.	_____	13.4 mi.		_____

4. On the day of the big race Debbie and Mitch had calculated the rates that they needed to maintain in order to have what they felt was a respectable showing for their first triathlon. Based on their rates, calculate what their time goals will be in each of the three events. (Recall: Distance / Rate = Time)

Debbie's		Distance (mi.)	/	Rate (mph)	=	Time (hr.)
a.	Swim	2.4		14.7		_____
	Cycle	112.0		26.4		_____
	Run	26.2		9.9		_____

Mitch's		Distance (mi.)	/	Rate (mph)	=	Time (hr.)
b.	Swim	2.4		15.3		_____
	Cycle	112.0		24.8		_____
	Run	26.2		11.6		_____

Review I -- Decimals   NAME: _Michael Plasmeier_   (11/23)

Write in words.
1) 6.82751   _Six and eighty-two thousand seven hundred fifty one hundred-thousandths_

Write as a decimal.
2) Eighty-two and fourteen ten-thousandths   _82.0014_

Compare. Use <, =, or >.
3) 8.2 > 8.167

Rewrite in order (least to greatest)
4) 0.958 / 0.598 / 0.96 / 0.9   _0.598, 0.9, 0.958, 0.96_

not really
a round
mistake
Round:
5) 8.0273982 to the nearest ten-thousandth   _8.0274_

Perform the indicated operations. Show all _work_ on separate paper.
6) 8.237 + 14.7 + 32 + 121.12 _176.057_
7) 846.8 + 12.671 _859.471_
8) 15.82 - 6.9 _8.92_
9) 120 - 44.281 _75.719_
10) (2.16)(32.1)(8.1) _561.6786_
11) (0.032)(0.9)(0.02) _0.000567_ decimal mistake
12) 3.685 ÷ 5.5 _.67_ place mistake
13) 0.38 ÷ 0.0004 _950_
14) 21.6 ÷ 0.44 _49_ (Round quotient to the nearest hundredth)

15) Paolo earns $209.92 each week. The following deductions are   _209.92_
    subtracted from his pay: federal income tax, $18.95;   _-18.95_
    state tax, $7.50; Social Security, $13.23; medical insurance,   _190.93_
    $10.12. How much does Paolo take home each week? _160.12_   _-7.50_
                                                                    _183.53_
16) Paula earns $250 a week. If she works 35 hours each week, what   _-13.23_
    is her hourly rate of pay?   _7.40_ → _$7.14_   _170.19_
                                   _35)250.000_   _-10.12_
17) 7.27 x 1000 _72700_   _245_   _160.12_
18) 0.98 ÷ 10,000 _9800_ _0.000 098_   _50_
19) 0.64 x 100,000 _64000_   _-35_
20) 0.9 ÷ 100 _10_ _0.009_   _150_
                                 _140_
21) Express as a decimal   _10.0_
    a) $\frac{3}{8}$ b) $\frac{11}{12}$ c) $3\frac{2}{9}$

22) Write in scientific notation.
    a) 12,100,000,000
    b) 3,200,000

3
35
x 7
245

2
35
x 4
140

Review I -- Word Problems

For each problem: identify the "important" facts
                     identify the operation(s)
                     write the # problem
                     solve the # problem
                     label the answer

1) The O'Connor family drove from their house to their aunt's house for
   a family dinner. They checked their odometer before they left on the
   trip (it read 27,854.7). When they arrived at their aunt's 7 hours
   later it read 28,306.2. What was their average speed in miles per
   hour?

$7 \div (28,306.2 - 27,854.7) = ?$

64.5

50.21 miles per hour

28306.2
-27854.5
6451.5

$7 \overline{)9451.5 0^3 8}$ 60.214 → 60.21

$7 \times 6 = 42 + 3$

2) A scale model of a train has an engine that is 16.8 cm long and 9 cars
   that are each 12.3 cm long. Each centimeter on the model represents
   0.7 m on the actual train. How long is the actual train?

$(16.8 + (9 \times 12.3)) \times .7)$

89.25 m

12.3
×9
110.7
+16.8
127.5

127.5
×.7
89.25

89.25

3) When I make coffee, I like a mixed blend. I bought three different
   kinds of coffee beans. Type A costs $4.20 a pound and I bought 2
   pounds. Type B costs $3.85 a pound and I bought 1 pound. Type C
   costs $4.95 a pound and I bought 2 pounds. What was the average
   cost per pound of my coffee blend?

$((4.20 \times 2) + 3.85 + (4.95 \times 2))$

$\div 5 = 4.43$ lbs

8.40
3.85
+9.90
22.15

4.95
×2
9.90

4.43
$5 \overline{)22.15}$

6)
```
  8.237
 14.700
 32
+121.120
 176.057
```

7)
```
 846.800
+ 12.671
 839.471
```

8)
```
 15.82
- 6.90
  8.92
```

9)
```
 120.000
- 44.281
  75.719
```

10)
```
    2.16
 × 32.10
    2160
   43200
 +648000
 69.3360
```

11)
```
    .632
  ×    9
   0.288
  × 0.02
 0.00576
```

```
 ~ 8.1
 69.3360
 55  9.9500
 562.62866
```

12)
```
 55 ) 3.685    .661 → .66    Add for
     -330                     .67
      385
     -330
       55
```

(left margin)
```
3
55
16 )
830
```

13)
```
          950.
 .0004 ) 0.3800
```

14)
```
          49.0909 → 49.09
 44 ) 21.600000
     -176.00
       4000
      -3960
        400
        396
        400
        369
```

```
  45  44
  3   4
 220  176

  3   44
 44   49
      396
```
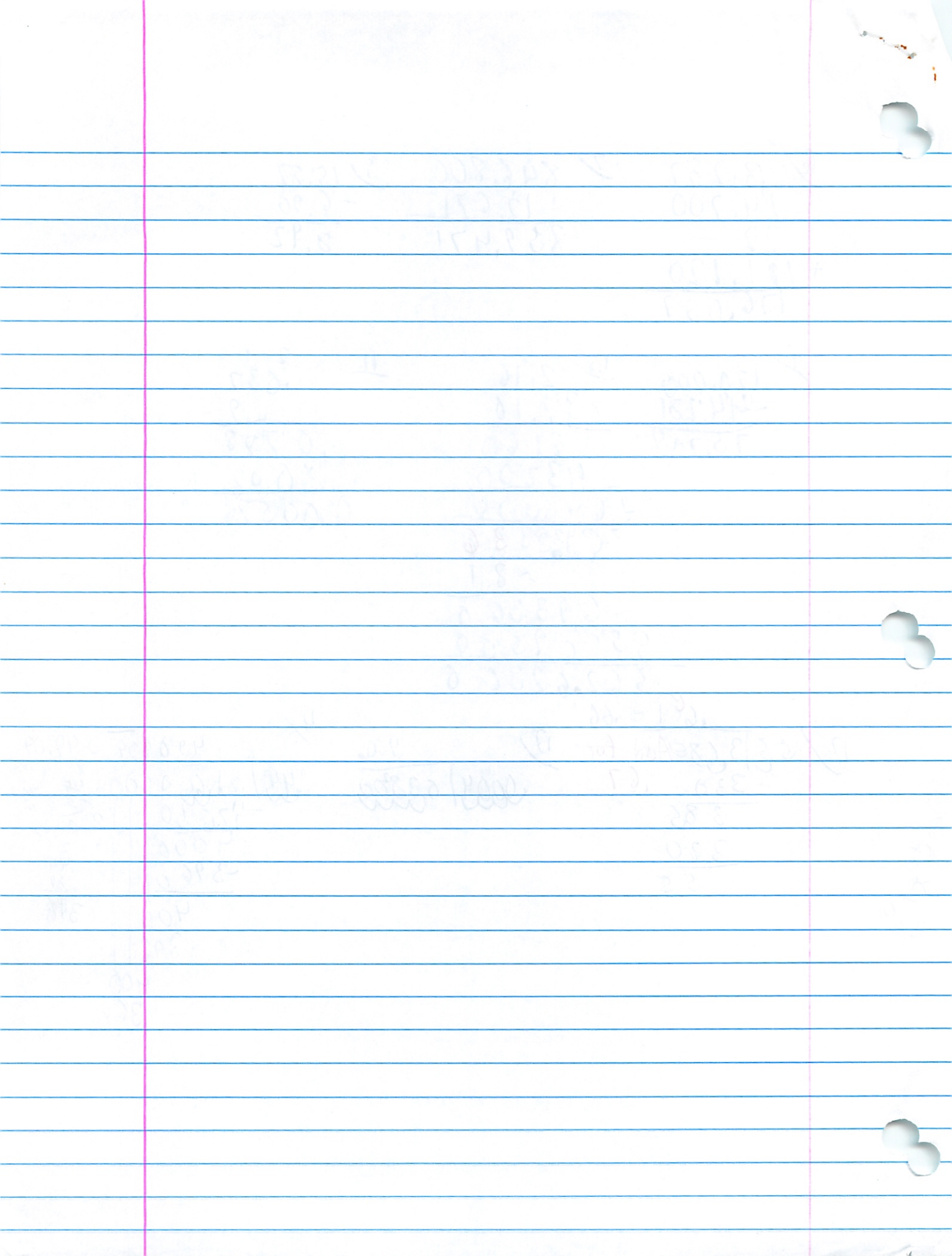
Review II -- Decimals   NAME: _____Plaz_____
Glencoe

Write in words.
1)   12.0098   *twelve and ninety eight ten-thousandths*

Write as a decimal.
2)   Three and fourteen millionths   *3.000014*

Compare. Use <, =, or >.
3)   14.6 < 14.82   4) 7.8 = 7.80000

Round:
5)   9.08|37 to the *9.08*   6)   8.9523 to the *9.0* (Include)
     nearest hundredth   nearest tenth

Rewrite in order (least to greatest)
7)   3.3 / 3.03/ 33.03 / 3.033   *3.03 / 3.033 / 3.3 / 33.03*

Perform the indicated operation. Show all work on separate paper.
8)   12.13 + 1.109 + 19 + 145.1134   *17.3524 + mistake*
9)   567.8 + 12.345   *580.145*
10) 45.73 - 8.8   *36.93*
11) 150 - 35.72   *114.23*
12) (1.23)(12.3)(1.2)   *18.1548*
13) (0.075)(0.8)(0.05)   *0.003*
14) 5.412 ÷ 4.4   *1.23*
15) 0.015 ÷ 0.0012   *12.5 -Decimal*
16) 32.6 ÷ 0.47   *69.322* (Round quotient to the nearest thousandth)

17) Janice had $285.35 at the beginning of the month. During the
     month she made purchases of $17.89, $26.90, $116.35, and $15.82.
     She also earned an additional $58.16. How much money did
     Janice have at the end of the month?   *$ 106.55*

     285.35
     -17.89
     267.46
     -66.90
     200.56
     -116.35

18) A job is advertised at a yearly salary of $32,800. If ther e
     are 245 working days a year, what is the daily rate to the
     nearest cent?   *$133.88*   *133.877 → (133.88)*
                                    245)32800.000
                                    245

19) 0.089 x 10,000 *890*
20) 4.6 ÷ 1000 *0.0046*
21) 1.7 x 100 *170*
22) 0.8 ÷ 100,000 *0.000008*

23) Express as a decimal
     a) 11/16   b) 19/24   c) 4 11/15

24) Write in scientific notation
     a) 6,500
     b) 38,000,000,000,000

8.42
-16.82
68.39
+58.16
126.55

Review II -- Word Problems

For each problem: identify the "important" facts
                    identify the operation(s)
                    write the # problem
                    solve the # problem
                    label the answer

1) The Martins rented a condominium about 3 blocks from the beach
   for $125.25 per night. They stayed 8 nights. If they paid a $500
   deposit, how much do they still owe for the condominium?

$500 - (125.25 \times 8) =$

$\$ \underline{502}$

125.25
$\times$ 8
10 02,00

1002
- 500
502

2) A scale model of a train has an engine that is 15.8 cm long and 8 cars
   that are each 12.9 cm long. Each centimeter on the model represents
   0.9 m on the actual train. How long is the actual train?

That's engine ← → That's Cars

$((15.8 \times 8) + 12.9) \times .9 =$

$\underline{189.8 \times}_{M}$ 107.1_{M}

12.9
$\times$ 8
126.4

126.4
+ 15.8
139,3

139,3
$\times .9$
123.37

Reverse

3) Daphne bought 4 paintbrushes at $4.85 each, an easel for $27, and 7
   tubes of paint at $2.72 each. How much money did she spend
   altogether?

$(4 \times 4.85) + 27 + (7 \times 2.72) =$

$\underline{\$ 65.44}$

4.85
$\times$ 4
19.4.0

2.72
$\times$ 7
19.04

19.40
27.00
+ 19.04
63.44

⑧ 12.130
1.109
19
+ 145 1134
77.3524

⑨ 567.800
+ 12.345
580.145

⑩ 45.73
- 8.80
36.93

⑪ 150.00
- 35.72
114.28

2+1+9+5 = 17 not 16

⑫ 1.23
× 12.3
369
2.460
+ 12366
15.129
× 1.2
30258
+ 151290
18.1548

⑬ 4
.075
× .8
0.0600
× .5
.030000   ? extra 0 ?

⑭   1.23
4.4) 5.412
-44
8 × 7 = 56 + 4 = 60   01
-88
132
132

⑮   125.
0.0017) 0.1500
-12
30
-24
60

⑯   665531 y 66553
0.47) 32.60.060
-294
320
-294
260
-235
250
-235
150
-141
90
47

47
× 6
294

8
47
× 8
235   47
× 3
141
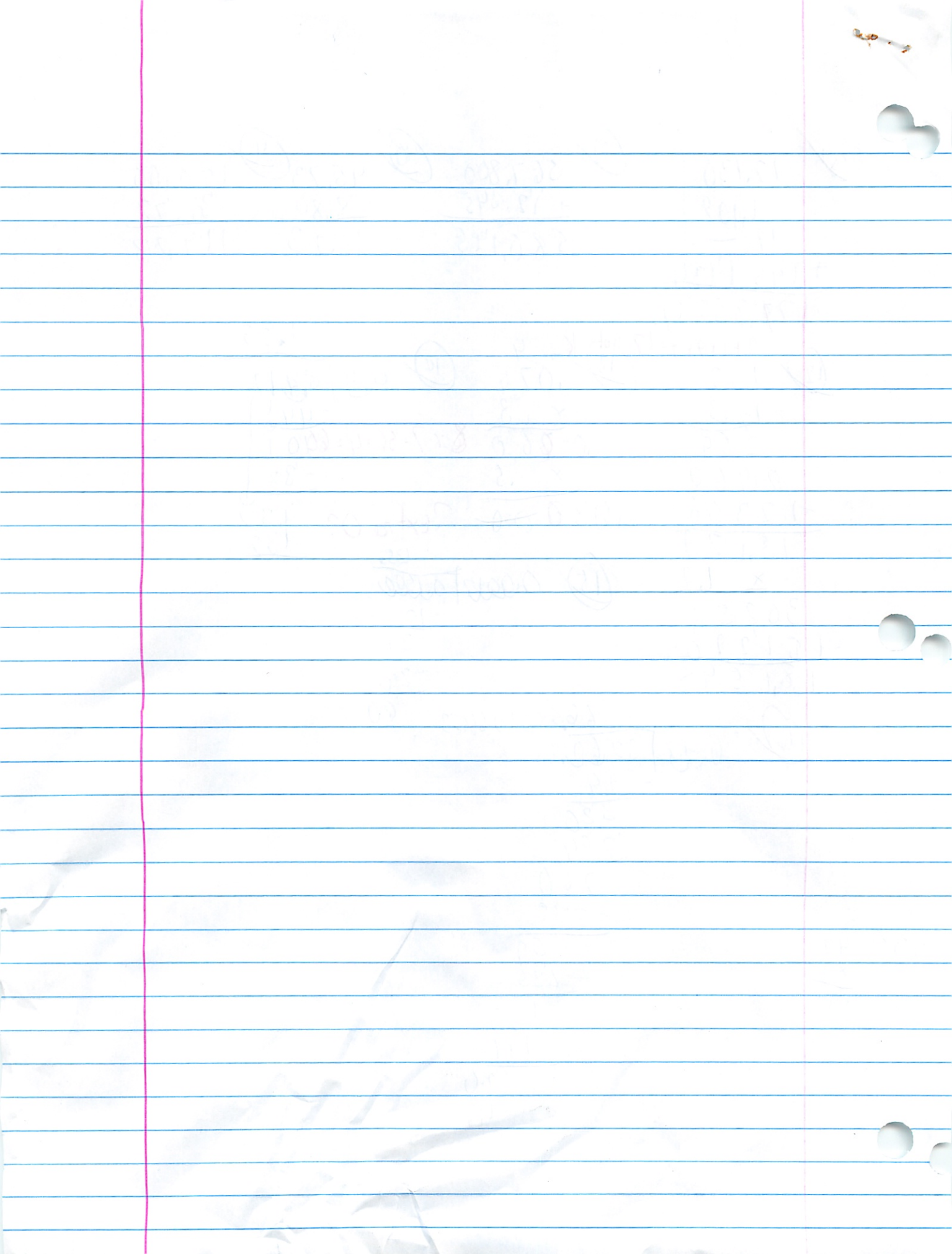
Review I -- decimals
Answers

1) six and eighty-two thousand seven hundred fifty-one hundred-thousandths
2) 82. 0014
3) >
4) 0.598   0.9   0.958   0.96
5) 8.0274
6) 176.057
7) 859.471
8) 8.92
9) 75.719
10) 561.6216
11) 0.000576
12) .67
13) 950
14) 49.09   (49.0909...)
15) $160.12
16) $7.14   (7.142857...)
17) 7270
18) 0.000098
19) 64,000
20) 0.009
21) a) 0.875   b) $0.91\overline{6}$ c) $3.\overline{7}$
22) a) 1.21×10^{10}
    b) 3.2×10^{6}

1) 64.5 mph
2) 89.25 m
3) $4.43 per pound

Review II -- decimals
    Answers

1) Twelve and ninty-eight
    ten-thousandths
2) 3.000014
3) <
4) =
5) 9.08
6) 9.0
7) 3.03   3.033   3.3   33.03
8) 177.3524
9) 580.145
10) 36.93
11) 114.28
12) 18.1548
13) 0.003
14) 1.23
15) 12.5
16) 69.362
17) $166.55
18) $133.88   (133.877551...)
19) 890
20) 0.0046
21) 170
22) 0.000008
23) a) 0.6875   b) 0.7916   c) 4.73
24) a) 6.5×10^{-3} b) 3.8×10^{13}

1) $502
2) 107.1 m
3) $65.44

NAME: Michael Plasmeier

Write in words.

1) 9.0012 _____ nine and twelve ten-thousandths _____

2) 0.06725 . _____ six thousand seven hundred twenty five hundred-thousandths _____

Write as a decimal.

3) Twelve and four hundred two thousandths _____ 12.402 _____

4) Eleven millionths _____ 0.000011 _____

Compare. Use <, =, or >.

5) 12.4 __?__ 12.398 _____ > _____

6) 8.887 __?__ 8.898 _____ < _____

Round

7) 4.893 to the nearest tenth _____ 4.9 _____

8) 12.03041 to the nearest thousandth _____ 12.030 _____

Perform the indicated operation. Show <u>work</u> on <u>separate</u> paper.

9) 9.453 + 15.2 + 45 + 0.0089 _____ 69.6619 _____

10) 1.001 + 0.001 + 0.1 + 0.0001 + 10 _____ 11.1021 ✓ _____

11) 71.24 - 15.8 _____ 55.44 _____

12) 170 - 63.765 _____ 106.235 _____

13) (3.12)(31.2)(0.05) _____ 4.8672 _____

14) (0.78)(0.5)(0.04) _____ 0.0156 _____

15) 10.79 ÷ 2.6 _____ 4.15 _____

16) 0.00324 ÷ 1.2 _____ 0.0027 _____

17) 0.0094 x 1000 _____ 9.4 _____

18) 0.0094 ÷ 1000 _____ 0.0000094 _____

19) 1.7 ÷ 100 _____ 0.017 _____

20) 1.7 x 100 _____ 170 _____

over

21) Chris earns $350 a week. If he works 38 hours each week, what is his hourly rate of pay?

22) Jackie had $300 at the beginning of the month During the month she made purchases of $18.22, $27.95, $112.16, and $16.50. She also earned an additional $74.83. How much money did Jackie have at the end of the month?

(handwritten, top right:) $9.21 $9.2 $1.99 $200

Answer the following:

23) How is subtraction of decimals similar to subtraction of whole numbers? How is it different?

similar -- *you take 1 away from another*

different -- *you line up place values*

24) *that is wrong Uh* Explain why we get 3.112 when we divide 14.3152 by 4.6

You are taking 4.6 parts of 14.3152 and 4.6 parts makes each part = 3.112 ← that's right, why is it wrong

25) Make up a problem that show one of the concepts we "learned" in this unit.

I had 20 boxes. I gave 1 box to ___ my friend. How many boxes do I have? (19)

(handwritten, right side:) 1st we didn't learn anything, we review and the au is not clear. Plaz

#9
```
  4,453
 15,200
 45 000
  .0089
 69,661 9
```

#16
```
 1.0010
 0.0010
  .1010
 0.0001
10.
11,1021
```

#11
```
  71,24
- 15.80
  55,44
```

#14
```
  8.78
× 0.5
0.390
× 0.04
0.01560
```

#12
```
  170,000
-  63,765
  106,235
```

#13
```
   3,17
  ×312
```

```
  624
 3120
 9 360 0
 9 7,3 4 4
  × .05
4.8 6 7 2 0
```

#10
```
        .0027
1,2 ) 0,0,0 324
      - 24
        84
        84
         0
```

#15
```
      4.15
26 ) 107 9 0
     -104
       39
      - 26
       130
       130
         0
```

```
  7
 38
 -9
 342
```

```
  12
  ×7
  84
```

```
   4
  38
  ×3
 190
```

```
  26
  ×4
 104
```

#21
```
          9.2105 → 9.21
38 ) 350.00 000
    -342
     - 80
     - 76
       40
      -88
      200
```

#27
```
  300,00
- 18,22
  281,88
- 27,95
  253 83
- 112,16
  140,67
- 16,50
  128 17
+ 74,83
 200,00
```

Don't
Carry

#5
```
      4.15
   ×   7.6
    2490
  + 8300
   10.790
```

#6
```
    .0027
  0 × 1.2
      54
  + 270
  0.00324
```

#7
```
    63.765
  × 100.235
  170.000
```

#8
```
    15.8
  + 65.44
   7.24
```

#9
```
   69.6618
  - 9.4530
   60.2089
   15.2006
   45.0089
  - 45.0089
    .0089
```

#10
```
   11.102
  - 1.001
   10.101
    .001
   10.100
  -  .1
   10.0001
```
= 0.0001

#11
```
     3.12
   ×  3.12
      624
     3120
  + 93600
  39 7.344 4
       × .05
  486720
```

#13
(crossed out)
```
      3.12
    × 1.05
   0.300
   ×  2
     120
   30600
  - 9180
   9.14720
```

#14
```
     .78
   × .5
    .390
   × .04
   0.01560
```

#12
(crossed out)
```
   9. 0.0001
   × 36.10
   2893.00
   3293.50
```

#21
```
    9.41
   × 38
    7528
  + 28230
   357.58
```

Round each fraction to 0 or 1.

1. $\frac{8}{9}$ __1__   2. $\frac{2}{15}$ __0__   3. $\frac{5}{12}$ __0__   4. $\frac{4}{27}$ __0__

5. $\frac{7}{15}$ __0__   6. $\frac{9}{11}$ __1__   7. $\frac{3}{50}$ __0__   8. $\frac{23}{25}$ __1__

Round each mixed number to the nearest whole number.

9. $2\frac{1}{5}$ _____   10. $3\frac{4}{9}$ _____   11. $4\frac{7}{8}$ _____   12. $1\frac{11}{12}$ _____

13. $3\frac{9}{10}$ _____   14. $7\frac{6}{11}$ _____   15. $2\frac{2}{9}$ _____   16. $5\frac{4}{7}$ _____

Estimate each sum or difference.

17. $8\frac{7}{9} - 1\frac{2}{15}$ _____   18. $\frac{1}{8} + \frac{5}{9}$ _____

19. $\frac{2}{11} + \frac{3}{20}$ _____   20. $2\frac{1}{4} + \frac{11}{12}$ _____

21. $5\frac{1}{8} - 2\frac{13}{16}$ _____   22. $\frac{7}{8} - \frac{7}{9}$ _____

23. $6\frac{7}{9} + 1\frac{2}{15}$ _____   24. $\frac{9}{10} - \frac{2}{9}$ _____

25. $3\frac{10}{11} + 5\frac{3}{4}$ _____   26. $\frac{2}{5} + \frac{7}{12}$ _____

27. $4\frac{8}{15} - \frac{7}{9}$ _____   28. $3\frac{3}{15} + 2\frac{1}{10}$ _____

Solve.

29. Cal had $8\frac{3}{8}$ yards of fabric. He used $6\frac{5}{6}$ yards to
reupholster a chair. About how much fabric does he have left? _____

30. Luisa has $3\frac{1}{5}$ cups of apple juice and $2\frac{2}{3}$ cups of
cherry cider. About how much fruit drink can she make? _____

Fraction

Review

WHICH WINTER WEAR?

Maria is making choices about clothing for winter skiing and mountain-climbing adventures. She's comparing winter gear in several catalogs. Read and answer the questions below about the clothing she is considering buying.

_____ 1. In a clothing catalog the new Mountain Parkas boast that they are 65% polyester. Write this percent as a fraction.

_____ 2. The 3-layer parka is advertised as the warmest. All three layers are of equal weight. One of the layers is 100% wool. No other layers contain wool. What fraction shows how much of the jacket is wool?

_____ 3. When Maria called the catalog center she was told that over 365 of the parkas were sold. If they originally had 500 parkas, what fraction would show how many were sold?

_____ 4. The Gore-Tex Squall that sells for $295 is compared to other squalls that cost $500. Write a fraction that compares the inexpensive squall to the expensive squall.

_____ 5. One woman's parka is two and three-fourths times the cost of a similar one in another catalog. Write the mixed numeral represented by these words.

_____ 6. The ski club asked Maria to order pullovers for everyone. There are 10 members of the club, and 7 of them wanted green pullovers. Write a fraction to represent the number that wanted green pullovers.

_____ 7. The quilted, goose down vest is advertised to be 98% waterproof. What fraction does this percent represent?

_____ 8. Leather gloves come in the following sizes: eight and one-half, nine and one-half, and ten and one-half. Write these three sizes as mixed numerals.

_____ 9. The ear bands come in the following colors: navy, evergreen, garnet, and black. The catalog company stocked 200 of each color. If 77 are left, what fraction of the ear bands have been sold?

_____ 10. In the 233-page catalog, 10 pages are devoted to outerwear. Write a fraction that compares the number of outerwear pages to the entire catalog.

_____ 11. The ski pants Maria wants are $89 in the Outdoor Outlet Catalog. The same pants are $108 in another catalog. Write a fraction that shows the comparison of the more expensive to the less expensive pants.

_____ 12. The Winter Wear catalog does one-third the business that the Outdoor Adventurer does. Write a fraction showing the comparison of the Outdoor Adventurer to Winter Wear.

2

HIGH-SPEED SPORTING

Bobsledding is a fast and dangerous winter sport. It's also one of the most thrilling. The sleds are made of aluminum and steel, and they travel up to 90 miles per hour. The length of each sled cannot exceed 12½ feet.
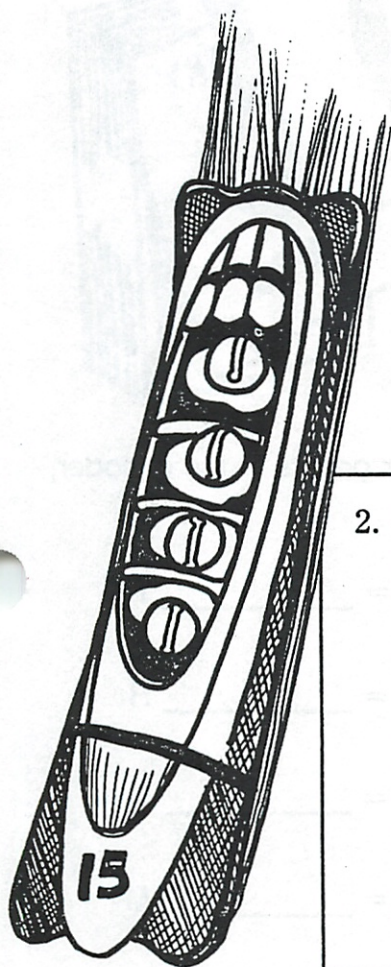
1. Place the sleds in order by their length. List these sleds from longest to shortest.

United States' sled	11⅞ feet	$11\frac{1}{4}$ ft
Jamaica's sled	12⅓ feet	$11\frac{8}{9}$ ft
Switzerland's sled	11⁸⁄₉ feet	$11\frac{7}{8}$ ft
Canada's sled	12½ feet	$12\frac{1}{3}$ ft
Russia's sled	11¼ feet	$12\frac{1}{2}$ ft

2. The total weight allowed on a bobsled (including the crew) is 1,389 pounds. Place these sleds in order by their weight, listing them from the lightest to the heaviest.

United States	1,333½ lbs.	_____
Jamaica	1,386⅓ lbs.	_____
Switzerland	1,386¾ lbs.	_____
Canada	1,386⅛ lbs.	_____
Russia	1,333¾ lbs.	_____

3. Championship bobsled races consist of four heats. The team with the lowest composite (total) score wins. Total the following heats and circle the winning team.

|	
United States	2½ minutes, 3 minutes, 3½ minutes, and 2½ minutes
Jamaica	2½ minutes, 2½ minutes, 3½ minutes, and 2½ minutes
Switzerland	2⅓ minutes, 2 minutes, 2½ minutes, and 3 minutes
Canada	2 minutes, 2½ minutes, 2 minutes, and 2⅓ minutes
Russia	2¾ minutes, 2½ minutes, 2½ minutes, and 3 minutes

3

NAME_____

How many months have 28 days?

DIRECTIONS: By finding a common denominator for a pair of fractions, you can determine which one is the greatest. Study this example:

Which is the greatest $\frac{2}{3}$ or $\frac{3}{4}$?

$$\frac{2}{3} = \frac{8}{12}$$

$$\frac{3}{4} = \frac{9}{12}$$

Therefore, $\frac{3}{4}$ is greater than $\frac{2}{3}$ by $\frac{1}{12}$.
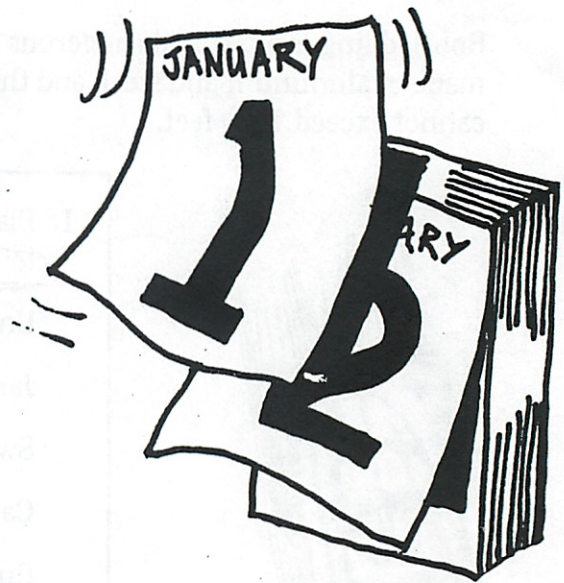
Find the greater fraction in each of the pairs below. Each time your answer occurs in the decoder, write the letter of the problem above it.

1. $\frac{2}{3}$ or $\frac{5}{8}$ = ___ $\frac{2}{3}$ ___ E

2. $\frac{5}{6}$ or $\frac{7}{8}$ = ___ $\frac{7}{8}$ ___ F

3. $\frac{2}{5}$ or $\frac{3}{6}$ = ___ $\frac{3}{6}$ ___ S

4. $\frac{7}{9}$ or $\frac{6}{8}$ = ___ $\frac{7}{9}$ ___ L

5. $\frac{4}{5}$ or $\frac{2}{3}$ = ___ $\frac{4}{5}$ ___ N

6. $\frac{5}{7}$ or $\frac{5}{6}$ = ___ $\frac{5}{6}$ ___ T

7. $\frac{2}{4}$ or $\frac{4}{9}$ = ___ $\frac{2}{4}$ ___ H

8. $\frac{1}{3}$ or $\frac{2}{9}$ = ___ $\frac{1}{3}$ ___ D

9. $\frac{4}{6}$ or $\frac{5}{9}$ = ___ $\frac{4}{6}$ ___ M

10. $\frac{5}{8}$ or $\frac{5}{7}$ = ___ $\frac{5}{7}$ ___ A

11. $\frac{3}{8}$ or $\frac{4}{9}$ = ___ $\frac{4}{9}$ ___ O

A ___ L ___ L ___ O ___ F ___ T ___ H ___ E
$\frac{5}{7}$ $\frac{7}{9}$ $\frac{7}{9}$ $\frac{4}{9}$ $\frac{7}{8}$ $\frac{5}{6}$ $\frac{2}{4}$ $\frac{2}{3}$

M ___ O ___ N ___ T ___ H ___ S ___ D ___ O
$\frac{4}{6}$ $\frac{4}{9}$ $\frac{4}{5}$ $\frac{5}{6}$ $\frac{2}{4}$ $\frac{3}{6}$ $\frac{1}{3}$ $\frac{4}{9}$
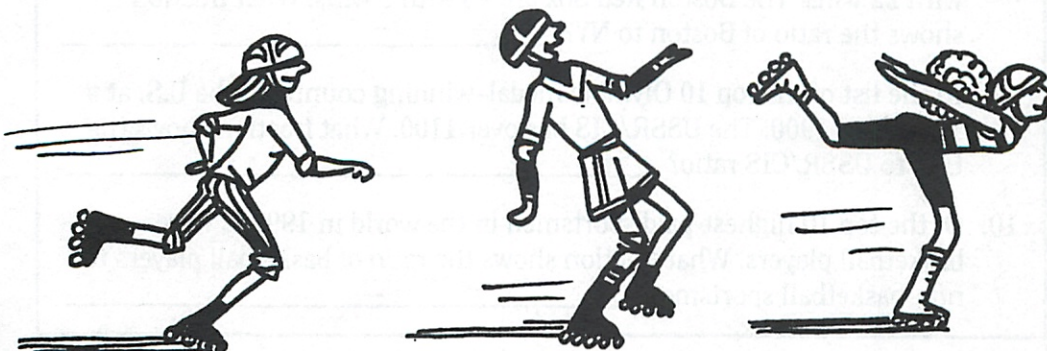
4

Evens

HOMEWORK FIRST

You've got your roller blades over your shoulder and are ready to go out the door, when your mom yells, "You have to do your homework first." Quickly finish these fraction problems about skating time.

I. Each improper fraction gives a time that one skater spent on roller blades for the past 10 days. Rewrite each improper fraction as a whole number or a mixed numeral in simplest form.

1. $5/2$ hrs. _____ $2\frac{1}{2}$ hrs

2. $8/3$ hrs. _____ $2\frac{2}{3}$ hrs

3. $13/4$ hrs. _____ $3\frac{4}{?}$ hrs

4. $11/8$ hrs. _____ $1\frac{3}{8}$ hrs

5. $9/3$ hrs. _____ 3 hrs

6. $12/5$ hrs. _____ $2\frac{2}{5}$ hrs

7. $24/7$ hrs. _____ 4 hrs

8. $3/2$ hrs. _____ $1\frac{1}{2}$ hrs

9. $15/2$ hrs. _____ $7\frac{1}{2}$ hrs

10. $13/5$ hrs. _____ $2\frac{3}{5}$ hrs

II. Each mixed numeral gives an amount of time that you've spent skating in the last 10 days. Rewrite each mixed numeral as an improper fraction.

11. 1 and $1/4$ hrs. _____ $\frac{3}{4}$ hrs

12. 1 and $3/4$ hrs. _____ $\frac{7}{4}$

13. 2 and $1/4$ hrs. _____ $\frac{9}{8}$

14. 2 and $1/5$ hrs. _____ $\frac{11}{5}$

15. 2 and $4/5$ hrs. _____ $\frac{14}{5}$

16. 4 and $1/5$ hrs. _____ $\frac{21}{5}$

17. 1 and $1/10$ hrs. _____ $\frac{11}{10}$

18. 1 and $5/10$ hrs. _____ $\frac{15}{10}$, $\frac{3}{2}$ *Simplify*

19. 3 and $1/10$ hrs. _____ $\frac{31}{10}$

20. 2 and $7/8$ hrs. _____ $\frac{23}{8}$

5

TOP 10 QUESTIONS

Here are 10 top questions about some top 10 topics in sports. You'll need to be in top shape with your understanding of equivalent fractions to answer these correctly. Choose your answers from the fractions sprinkled around the page.

$\frac{1}{5}$

$\frac{25}{110}$

$\frac{12}{52}$

$\frac{45}{50}$

$\frac{14}{20}$

$\frac{9}{21}$

$\frac{6}{20}$

$\frac{3}{5}$

$\frac{5}{18}$

$\frac{19}{11}$

$\frac{15}{30}$

$\frac{19}{10}$

$\frac{3}{5}$

$\frac{11}{44}$

1. Of the 10 most common sports injuries, 6 are specific to legs and knees. What fraction is equivalent to this ratio of 6/10? _____ 3/5

2. 5 of the 10 highest-earning sports movies feature boxing. Which fraction is equivalent to this ratio?_____

3. Over 40 million households watched Super Bowl XVI, the biggest TV audience ever for a sports event through 1996. Of the top 10 most-watched sporting events, 8 others were Super Bowls. What fraction shows the ratio of Super Bowls to the total of 10?_____

4. Riots, stampedes, crushes, collapsed stands, and fires at soccer games make up 7 of the top 10 worst disasters at sports events in the 20th century. What fraction shows the ratio of non-soccer disasters to soccer disasters? _____

5. In the 10 worst disasters at sports events, about 1900 people were killed. Approximately 1000 of these deaths happened at soccer events. What fraction shows this ratio? _____

6. The top 10 Olympic medal–winning countries in bobsledding have won a total of 90 medals. Switzerland holds 25 of these. What fraction shows the ratio of Switzerland's medals to the total? _____ 25/100

7. U.S. Figure skater Kristi Yamaguchi, one of the top 10 world and 5/18 Olympic title holders for women, holds 3 titles. Katarina Witt holds 6. Sonja Heine is number one with 13.
   a. What fraction shows the ratio of Kristi's to Katarina's titles? _____
   b. What fraction shows the ratio of Kristi's to Sonja's? _____

8. In the list of top 10 winners of the World Series, the NY Yankees are first with 22 wins. The Boston Red Sox are #5 with 5 wins. What fraction shows the ratio of Boston to NY? 5/22 _____

9. In the list of the top 10 Olympic medal–winning countries, the U.S. at # 1 has over 1900. The USSR/CIS has over 1100. What fraction shows the U.S. to USSR/CIS ratio? _____

10. Of the top 10 highest-paid sportsmen in the world in 1995, 2 were basketball players. What fraction shows the ratio of basketball players to non-basketball sportsmen? _____
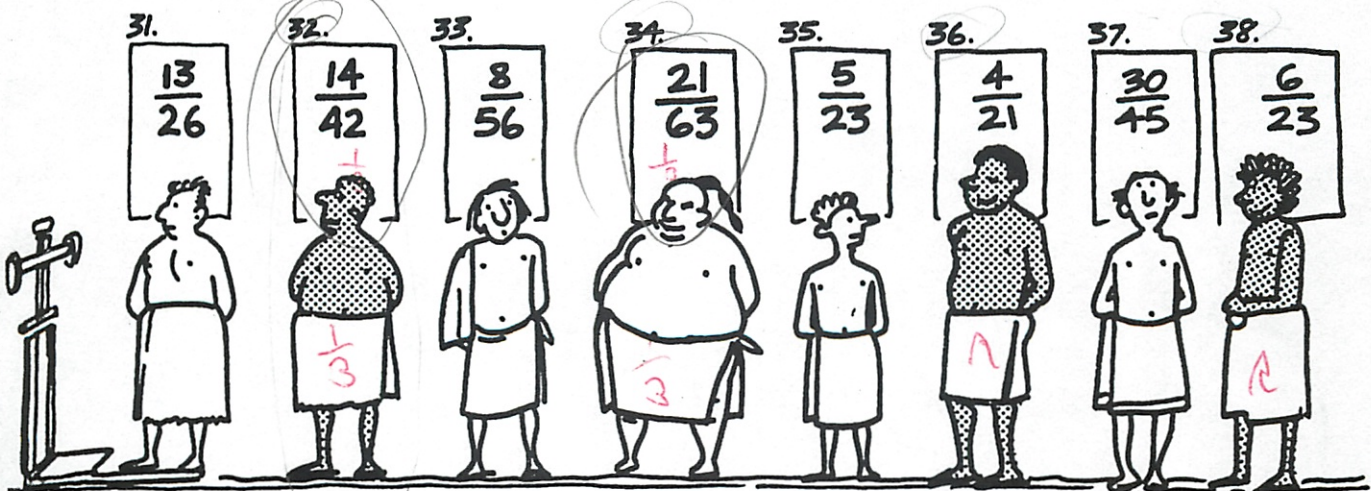
Evens

WEIGHING IN!

Many athletes have to pay attention to their weight to participate in athletics. Some athletes, such as football players, wrestlers, or fighters, may wish to increase weight. In many cases, athletes are trying to reduce their weight. These fractions are a bit "weighty." They need reducing. In each case, reduce them to their lowest terms.

1. $4/8$ — $\frac{1}{2}$

2. $12/16$ — $\frac{3}{4}$

3. $20/25$ — _____

4. $15/30$ — $\frac{1}{2}$

5. $2/6$ — _____

6. $3/9$ — $\frac{1}{3}$

7. $9/27$ — _____

8. $12/15$ — $\frac{4}{5}$

9. $36/42$ — _____

10. $2/4$ — $\frac{1}{2}$

11. $2/8$ — _____

12. $6/8$ — $\frac{3}{4}$

13. $4/8$ — _____

14. $2/12$ — $\frac{1}{6}$

15. $8/20$ — _____

16. $10/25$ — $\frac{2}{5}$

17. $25/35$ — _____

18. $32/36$ — $\frac{8}{9}$

19. $20/55$ — _____

20. $12/21$ — $\frac{4}{7}$

21. $15/18$ — _____

22. $6/9$ — $\frac{2}{3}$

23. $3/12$ — _____

24. $25/30$ — $\frac{5}{6}$

25. $30/48$ — _____

26. $50/100$ — $\frac{1}{2}$

27. $9/24$ — _____

28. $13/39$ — $\frac{1}{3}$ (?)

29. $8/16$ — _____

30. $4/18$ — $\frac{2}{9}$

Reduced or **Not Reduced?** That is the question.

Circle all the fractions that are reduced to lowest terms. If a fraction is not reduced to lowest terms, reduce it and write your answer beside the fraction.

31. $\frac{13}{26}$ 32. $\frac{14}{42}$ $\frac{1}{3}$ 33. $\frac{8}{56}$ 34. $\frac{21}{63}$ $\frac{1}{3}$ 35. $\frac{5}{23}$ 36. $\frac{4}{21}$ 37. $\frac{30}{45}$ 38. $\frac{6}{23}$

7

Find each sum in simplest form.

1. $\dfrac{1}{2}$
$+\dfrac{3}{8}$

2. $\dfrac{1}{12}$
$+\dfrac{3}{4}$

3. $\dfrac{5}{8}$
$+\dfrac{1}{4}$

4. $\dfrac{5}{6}$
$+\dfrac{1}{8}$

5. $\dfrac{1}{2}$
$+\dfrac{2}{5}$

6. $\dfrac{5}{9}$
$+\dfrac{2}{3}$

7. $\dfrac{3}{4}$
$+\dfrac{2}{5}$

8. $\dfrac{7}{12}$
$+\dfrac{1}{3}$

9. $\dfrac{3}{4}$
$+\dfrac{1}{10}$

10. $\dfrac{1}{3}$
$+\dfrac{5}{6}$

11. $\dfrac{2}{9}$
$+\dfrac{1}{6}$

12. $\dfrac{2}{9}$
$+\dfrac{1}{5}$

13. $\dfrac{3}{5}$
$+\dfrac{1}{10}$

14. $\dfrac{4}{5}$
$+\dfrac{1}{3}$

15. $\dfrac{5}{12}$
$+\dfrac{2}{3}$

16. $\dfrac{2}{3}$
$+\dfrac{1}{6}$

17. $\dfrac{11}{12}$
$+\dfrac{1}{6}$

18. $\dfrac{7}{9}$
$+\dfrac{1}{3}$

19. $\dfrac{3}{4}$
$+\dfrac{2}{3}$

20. $\dfrac{1}{9}$
$+\dfrac{5}{6}$

Solve.

21. Lisa spends $\dfrac{1}{5}$ of an hour doing her math homework and $\dfrac{1}{3}$ of an hour doing her social studies homework. What fraction of an hour does she spend doing her math and social studies homework? _____

22. Clint rode his bike $\dfrac{3}{8}$ mile to the library and then $\dfrac{3}{4}$ mile to the park. How far did he ride altogether? _____

8

Add. Write the sum in simplest form.

1. $13\frac{1}{5}$
   $+ 5\frac{3}{5}$

2. $7\frac{2}{5}$
   $+ 1\frac{2}{3}$

3. $9\frac{20}{23}$
   $+ 14$

4. 6
   $+ 14\frac{1}{2}$
   $20\frac{1}{2}$

5. 4
   $+ 9\frac{5}{17}$

6. $3\frac{16}{19}$
   $+ 7$

7. $10\frac{13}{15}$
   $+ 4\frac{13}{15}$

8. 2
   $+ 16\frac{5}{19}$
   $18\frac{5}{19}$

9. $6\frac{1}{7}$
   $+ 19\frac{2}{5}$

10. $15\frac{1}{2}$
    $+ 17\frac{1}{7}$

11. $10\frac{1}{4}$
    $+ 7\frac{3}{4}$

12. $1\frac{4}{5}\ \frac{24}{30}$
    $+ 3\frac{5}{6}\ \frac{25}{30}$
    $4\ \frac{49}{30} \rightarrow 5\frac{19}{30} \rightarrow 5\frac{19}{30}, 5\frac{1}{2}$

13. $11\frac{10}{11}$
    $+ 5$

14. $11\frac{3}{8}$
    $+ 16\frac{3}{4}$

15. $11\frac{4}{5}$
    $+ 2\frac{13}{15}$

16. $16\frac{4}{15}$
    $+ 8\frac{13}{15}$
    $24\frac{17}{15} \rightarrow 25\frac{2}{15}$

17. Stephanie used $2\frac{7}{8}$ feet of ribbon to trim a pillowcase and $5\frac{1}{2}$ feet of ribbon to trim a quilt. How much ribbon did she use in all? _____

18. A recipe calls for $1\frac{1}{4}$ cups of cheddar cheese, $1\frac{1}{3}$ cups of Monterey jack cheese, and $1\frac{1}{2}$ cups of mozzarella cheese. How much cheese is used in the recipe? _____

9

Find each difference in simplest form.

1. $\frac{3}{4}$
   $-\frac{1}{8}$

2. $\frac{6}{8}$
   $-\frac{5}{8}$

3. $\frac{8}{9}$
   $-\frac{2}{3}$

4. $\frac{3}{20}$
   $-\frac{1}{20}$
   $\frac{2}{20}\left(\frac{1}{10}\right)$

5. $\frac{5}{6}$
   $-\frac{1}{2}$

6. $\frac{1}{5}$
   $-\frac{1}{7}$

7. $\frac{4}{5}$
   $-\frac{1}{6}$

8. $\frac{7}{14}$
   $-\frac{3}{14}$
   $\frac{4}{14}\left(\frac{2}{7}\right)$

9. $\frac{3}{5}$
   $-\frac{1}{3}$

10. $\frac{7}{8}$
    $-\frac{1}{4}$

11. $\frac{2}{5}$
    $-\frac{1}{10}$

12. $\frac{2}{3}\,\frac{8}{12}$
    $-\frac{1}{4}\,\frac{3}{12}$
    $\left(\frac{5}{12}\right)$

13. $\frac{5}{6}$
    $-\frac{1}{3}$

14. $\frac{2}{3}$
    $-\frac{2}{5}$

15. $\frac{9}{10}$
    $-\frac{3}{4}$

Solve.

16. Josy exercised $\frac{5}{6}$ of an hour on Monday and $\frac{3}{5}$ of an hour on Tuesday. How much longer did she exercise on Monday? _____ $\frac{7}{30}$ of an hr

17. Larry, Mary, and Sara share a pizza. The fraction of the pizza each ate is shown in the table at the right. Which two children were closest in the fraction they ate?

_____

Fraction of the Pizza Eaten	
Larry	$\frac{1}{6}$
Mary	$\frac{3}{8}$
Sara	$\frac{11}{24}$

$\frac{5}{6}\quad\frac{25}{36}$

$\frac{3}{5}\quad\frac{18}{30}$
$\quad\quad\left(\frac{7}{30}\right)$

10

Rename each number.

1. $8 = 7\dfrac{\boxed{5}}{5}$

2. $4\dfrac{1}{8} = 3\dfrac{\boxed{9}}{8}$

3. $5\dfrac{3}{5} = 4\dfrac{\boxed{8}}{5}$

4. $3\dfrac{4}{9} = 2\dfrac{\boxed{13}}{9}$

5. $5 = 4\dfrac{\boxed{12}}{12}$

6. $9\dfrac{1}{6} = 8\dfrac{\boxed{7}}{6}$

Subtract. Write each difference in simplest form.

7. $\begin{array}{r} 4 \\ -\,1\frac{2}{3} \\ \hline \end{array}$

8. $\begin{array}{r} 6\frac{1}{4} \\ -\,4\frac{3}{4} \\ \hline \end{array}$

9. $\begin{array}{r} 5\frac{2}{5} \\ -\,2\frac{4}{5} \\ \hline \end{array}$

10. $\begin{array}{r} 7 \\ -\,4\frac{4}{9} \\ \hline \end{array}$

11. $\begin{array}{r} 3\frac{2}{7} \\ -\,1\frac{6}{7} \\ \hline \end{array}$

12. $\begin{array}{r} \overset{7}{8}\frac{\overset{4}{}}{4} \\ -\,3\frac{3}{4} \\ \hline 4\frac{1}{4} \end{array}$

13. $\begin{array}{r} 6 \\ -\,4\frac{5}{8} \\ \hline \end{array}$

14. $\begin{array}{r} 9 \\ -\,2\frac{1}{2} \\ \hline \end{array}$

15. $\begin{array}{r} 4\frac{1}{8} \\ -\,1\frac{3}{8} \\ \hline \end{array}$

16. $\begin{array}{r} \overset{11}{12}\frac{\overset{4}{}}{4} \\ -\,3\frac{3}{4} \\ \hline \end{array}$ $\left(8\frac{1}{4}\right)$

17. $\begin{array}{r} 5\frac{3}{8} \\ -\,2\frac{7}{8} \\ \hline \end{array}$

18. $\begin{array}{r} 7 \\ -\,\frac{5}{6} \\ \hline \end{array}$

19. $6\dfrac{2}{9} - 3\dfrac{7}{9} = \underline{}$

20. $4\dfrac{1}{12} - 1\dfrac{5}{12} = \underline{}\;3\frac{1}{2}$ $4\frac{1}{2}$ $2\frac{2}{3}$

21. $3 - 2\dfrac{3}{5} = \underline{}$

Solve.

22. Caitlin buys 3 pounds of peanuts. She uses $1\frac{7}{8}$ pounds to make some trail mix. How many pounds of peanuts does she have left? $\underline{}$

23. Brad rode his bike $4\frac{3}{10}$ miles. Then he ran $2\frac{9}{10}$ miles. How much farther did he ride than run? $\underline{}$

$\begin{array}{r} 4\frac{1}{2}\;\frac{6}{12} \\ -\,1\frac{5}{12}\;\frac{5}{12} \\ \hline 3\;\frac{2}{3} \end{array}$

11

Find each difference in simplest form.

1. $5\frac{2}{7}$
   $-4\frac{2}{3}$

2. $15\frac{7}{10}$ $\frac{7}{10}$
   $-12\frac{2}{5}$ $\frac{4}{10}$
   $3\frac{3}{10}$

3. $7\frac{1}{3}$
   $-4\frac{1}{18}$

4. $2\frac{3}{8}$ $\frac{6}{16}$
   $-2\frac{5}{16}$
   $\frac{1}{16}$

5. $8\frac{5}{8}$
   $-4\frac{7}{24}$

6. $10\frac{1}{3}$ $\frac{8}{6}$
   $-4\frac{5}{6}$
   $5\frac{3}{6}$ or $5\frac{1}{2}$

7. $9\frac{2}{3}$
   $-1\frac{1}{10}$

8. $12\frac{3}{8}$ $\frac{66}{48}$
   $-8\frac{5}{6}$ $\frac{40}{48}$
   $3\frac{26}{48} \to 3\frac{13}{24}$

9. $5\frac{1}{6}$
   $-2\frac{3}{5}$

10. $9\frac{1}{10}$ $\frac{11}{10}$
    $-7\frac{2}{5}$ $\frac{4}{10}$
    $1\frac{7}{10}$

11. $3\frac{1}{2}$
    $-1\frac{5}{6}$

12. $3\frac{2}{3}$ $\frac{10}{15}$
    $-1\frac{8}{15}$ $\frac{8}{10}$
    $2\frac{2}{15}$

13. $10\frac{4}{5}$
    $-1\frac{14}{25}$

14. $8\frac{4}{7}$ $\frac{8}{14}$
    $-1\frac{1}{2}$ $\frac{7}{14}$
    $7\frac{1}{14}$

15. $2\frac{1}{2}$
    $-1\frac{19}{21}$

16. $12\frac{3}{4}$ $\frac{21}{28}$
    $-5\frac{1}{7}$ $\frac{4}{28}$
    $7\frac{17}{28}$

17. $7\frac{4}{5}$
    $-2\frac{5}{8}$

18. $10\frac{17}{21}$
    $-1\frac{5}{7}$ $\frac{15}{21}$
    $9\frac{2}{21}$

19. $10\frac{7}{18}$
    $-4\frac{1}{3}$

20. $15\frac{11}{14}$
    $-14\frac{1}{7}$ $\frac{2}{14}$
    $1\frac{9}{14}$

Solve.

21. Jessie baked $6\frac{1}{2}$ dozen cookies for a bake sale, and $4\frac{2}{3}$ dozen of the cookies were sold. How many dozen cookies were left over? _____

12

Solve each problem.

1. Toni has an art class for $1\frac{1}{3}$ hours every Thursday. She was late to class this Thursday and was in class for $\frac{5}{6}$ of an hour. How late was she to art class?

   $\frac{1}{2}$ hr late

2. At Paul's Pet Palace, $\frac{3}{16}$ of the animals are dogs and $\frac{5}{24}$ of the animals are cats. What fraction of the animals are neither dogs nor cats?

   $\frac{29}{48}$ of animals

3. At a school music festival, Julia played saxophone for $2\frac{2}{3}$ hours, Caroline sang for $1\frac{3}{4}$ hours, Lamont played saxophone for $1\frac{1}{4}$ hours, and Taylor sang for $2\frac{3}{8}$ hours. Who had more time, the saxophone players or the singers? How much more?

   Singers by $\frac{5}{24}$ hrs

4. Steve bought $2\frac{3}{4}$ pounds of broccoli, $1\frac{1}{2}$ pounds of spinach, and $\frac{7}{8}$ pound of carrots. He also bought $2\frac{1}{2}$ pounds of apples and $2\frac{3}{8}$ pounds of oranges. Did he buy more fruit or more vegetables? How much more?

   Veg. by $\frac{1}{4}$ lbs

5. To get to school, Harley traveled $\frac{5}{6}$ mile along Arlington Avenue, then another $\frac{3}{8}$ mile along Forest Street. How long is his trip?

   $1\frac{5}{24}$ mi

6. During a trip, Steve drove $\frac{1}{4}$ of the time, Chris drove $\frac{1}{6}$ of the time, and Doris drove the rest of the time. What fraction of the time did Doris drive?

   $\frac{7}{12}$ of the time

7. Paolo noticed that Channel 8 devoted $\frac{1}{6}$ hour to a news story and Channel 12 devoted $\frac{1}{8}$ hour to the same story. Which channel devoted more time? How much more time?

   Ch. 8 by $\frac{1}{24}$ hrs

#1
$1\frac{1}{3}$ $\frac{8}{6}$

$1\frac{5}{6}$

$\frac{3}{6}$ $\frac{1}{2}$

#2
$\frac{3}{16}$ $\frac{9}{48}$

$\frac{5}{24}$ $\frac{10}{48}$

$\frac{48}{48}$

$\frac{-19}{48}$

$\frac{29}{48}$

#3
$2\frac{2}{3}$ $\frac{8}{12}$

$1\frac{1}{4}$ $\frac{3}{12}$ $3\frac{11}{12}$

$23\frac{8}{8}$ $3\frac{9}{8}$ $3\frac{3}{8}$

$4\frac{1}{8}$ $\frac{33}{24}$

$-3\frac{18}{12}$ $3\frac{22}{24}$

$3\frac{6}{24}$

$3\sqrt{48}$

$2\sqrt{48}$

$\frac{16}{24}$

4
$7\frac{3}{4}$ $\frac{6}{8}$

$1\frac{1}{2}$ $\frac{4}{8}$ F $2\frac{3}{8}$

$\frac{7}{8}$ $4\frac{2}{8}$

$5\frac{9}{8}$

$3\frac{17}{8}$ $4\frac{2}{8}$

$\frac{2}{8} \div 4$

5
$\frac{5}{6}$ $\frac{20}{24}$

$\frac{3}{8}$ $\frac{9}{24}$

$\frac{29}{24}$

$1\frac{5}{24}$

6
$\frac{1}{4}$ $\frac{6}{24}$

$\frac{1}{6}$ $\frac{4}{24}$

$\frac{10}{24}$ $\frac{5}{12}$

$\frac{7}{12}$

7
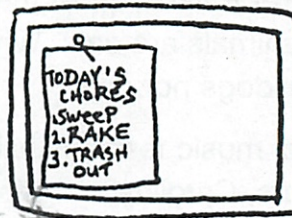$\frac{1}{6}$ $\frac{4}{24}$

$\frac{1}{8}$ $\frac{3}{24}$

$\frac{1}{24}$ 13

NAME_____

What does an elf do after school?

DIRECTIONS: First, solve each of the word problems on another sheet of paper. Second, find your answer in the secret code. Third, each time your answer appears in the secret code, write the letter of the problem above it.

1. John hiked $1\frac{1}{2}$ hours on Monday, $2\frac{1}{3}$ hours on Tuesday and $1\frac{3}{4}$ hours on Wednesday. How many total hours did John hike? _____ = R

2. If a cake recipe called for $1\frac{1}{3}$ cups of flour, and Kim had only $\frac{3}{4}$ cup of flour, how much more flour did she need? _____ = M

3. If Ben's family drinks $\frac{2}{3}$ gallons of milk on Wednesday, $1\frac{3}{4}$ gallons on Thursday, $\frac{3}{4}$ gallons gallons on Friday, and $\frac{1}{2}$ gallon Saturday, how many gallons of milk did Ben's family drink in all? _____ = N

4. Gary's ant farm can hold $2\frac{1}{2}$ cups of sand. On Thursday Gary used $\frac{4}{5}$ cups of sand in his ant farm. On Friday he added $\frac{9}{10}$ cups more of sand. How much more sand will his ant farm hold? _____ = W

5. Robert's family made $6\frac{1}{2}$ pounds of potato salad for a community picnic. Only $3\frac{3}{4}$ pounds were eaten. How many pounds of potato salad were left? _____ = K

6. Kevin rode his bike $1\frac{1}{3}$ miles on Monday, $2\frac{5}{6}$ miles on Wednesday, and $3\frac{1}{5}$ miles on on Friday. How many total miles did he ride? _____ = E

7. Katie practiced piano for $4\frac{1}{2}$ hours during spring break. The following week she practiced $2\frac{1}{3}$ hours. How many more hours did she practice during spring break? _____ = O

8. Chris watched television for $\frac{3}{4}$ hours on Saturday, 1 hour on Monday, $1\frac{1}{2}$ hours on Tuesday, $\frac{1}{2}$ hour on Wednesday, $\frac{1}{3}$ hour on Thursday, $\frac{1}{2}$ hour on Friday, and $2\frac{1}{2}$ hours on Saturday. How many total hours did Chris watch television? _____ = G

G	N	O	M	E	N	O	R	K
$7\frac{1}{12}$	$3\frac{2}{3}$	$2\frac{1}{6}$	$7\frac{7}{12}$	$7\frac{11}{30}$	$\frac{4}{5}$	$2\frac{1}{6}$	$5\frac{7}{12}$	$2\frac{3}{4}$

FRIDAY NIGHT FOOTBALL

Haverford   *Ridley*

East Middle School's football team is getting beaten badly by Franklin Middle School. The score is 42 to 10. Sherry and Elizabeth are bored with the game, but they have to stay until their older brother comes to pick them up. Maybe the time will go faster if they try to figure out the answers to these dilemmas. (Use the sketch of a football field on page 127 to help you solve problems.) Give your answers in fractions, whole numbers, or mixed numerals.

_____ $9\frac{3}{4}$ min _____ 1. The first field goal East Middle School makes is $2\frac{1}{4}$ minutes into the first quarter. If the clock starts counting down at 12 minutes, how much time is left on the clock when this field goal is scored?

_____ $\cancel{2\frac{3}{4}}$ 3 min _____ 2. The second quarter starts and the clock is reset to 12 minutes. Franklin's first touchdown is made $3\frac{1}{4}$ minutes into the quarter. Another touchdown is made $5\frac{3}{4}$ minutes later. How much time is left in the second quarter when the second touch down is scored?

_____ $10\frac{1}{2}$ min _____ 3. East scores their final touchdown $1\frac{1}{2}$ minutes into the third quarter. If the clock is reset to 12 at the beginning of each quarter, how many minutes are left after the East touchdown?

_____ 82 yds _____ 4. Franklin Middle School gains the following yards during one of their periods of possession: $12\frac{1}{2}$ yards, $9\frac{1}{2}$ yards, $32\frac{1}{2}$ yards, 2 yards, and $25\frac{1}{2}$ yards. How many yards are gained by Franklin Middle School?

_____ East _____ 5. East Middle School has possession of the ball on the 50-yard line. The team gains $11\frac{1}{4}$ yards. In the next play the ball is intercepted by Franklin's team and they run the ball $33\frac{3}{4}$ yards towards their goal. Where is the ball placed for the next play? Is it closer to Franklin's or East's goal? (Use the football field sketch to help with this problem.)

need yds answer

$27\frac{1}{2}$ yds

6. The sportswriter for the East School newspaper is writing an article for the paper. He is highlighting the players listed below. To help the sportswriter, use the information in the chart below and total the players' yards gained.

Yards Gained

Lightning Larry	$12\frac{3}{4}$ yds.	$7\frac{1}{4}$ yds.	2 yds.	22 total
Cool-Kick Kerry	7 yds.	$2\frac{1}{2}$ yds.	$4\frac{1}{2}$ yds.	14 total
Jumpin' Joe	$33\frac{1}{4}$ yds.	$2\frac{3}{4}$ yds.	10 yds.	46 total
Speedy Sam	23 yds.	$3\frac{1}{3}$ yds.	$4\frac{2}{3}$ yds.	31 total

15

Use with page 126.

FRANKLIN'S TERRITORY
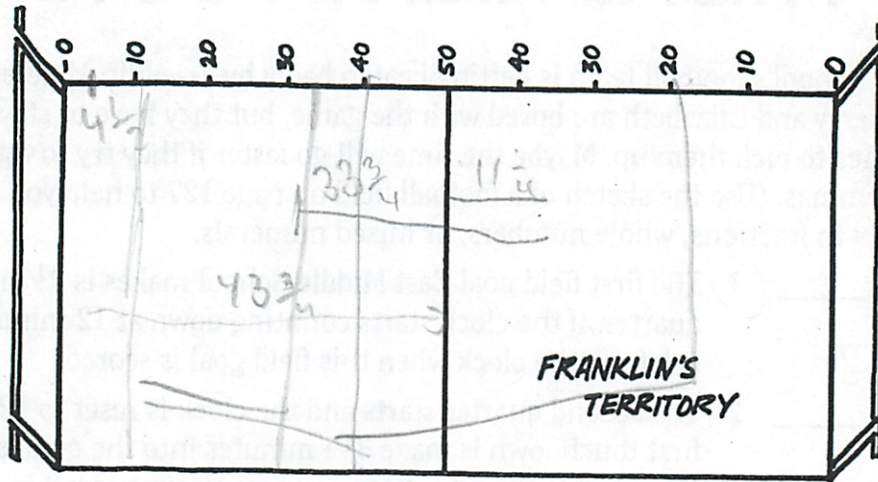
Yes   7. Brad is over at the concession stand. He needs a hot dog, chips, and a drink; he has $3. Does Brad have enough money to buy a hot dog (a dollar and a half), a bag of chips (a half dollar), and a drink (three-quarters of a dollar)?

48¼ yds   8. East is close to a touchdown in the first half. They have the ball 4½ yards back from their goal line. Franklin intercepts the ball and runs 43¾ yards in the other direction. How far back from East's goal line is the ball now?

8⅙ min   9. Bored Elizabeth, watching the clock, notices that there are 3 minutes and 50 seconds left in the third quarter (3⅚ minutes). If each quarter is 12 minutes, how much time has already passed in the third quarter?

8:30 PM   10. Sherry ate supper at 5:20. She looks at her watch and realizes that was 3 and ⅙ hours ago. What time is it now?

9:10 PM   11. Elizabeth is so tired. She plans to be in bed in 2⅓ hours. That will be 11:30 P.M. What time is it now?

53⅓ yds   12. In the last quarter, Franklin runs the ball from East's 40 yard line to a position just 6⅓ yards back from their own goal line. How far do they move the ball on this play?

76⅓ yds   13. The biggest play of the game is a pass and a great run following it. James Johnston throws the ball from the 10 yard line of East. It is caught by Tom Jacobs at East's 32½ yard line. He then runs to Franklin's 13⅔ yard line. How far does the ball travel on that play?

10.00   14. Sherry and Elizabeth wait for their brother ¾ of an hour past the time when he was supposed to pick them up. If he was supposed to come at quarter past nine, when did he arrive?

Find each product in simplest form.

1. $\frac{1}{2} \times \frac{1}{2} =$ _____

2. $\frac{2}{3} \times \frac{9}{10} =$ _____

3. $\frac{1}{4} \times \frac{3}{5} =$ _____

4. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ _____

5. $\frac{5}{6} \times \frac{2}{3} =$ _____

6. $\frac{5}{8} \times \frac{1}{9} =$ _____

7. $\frac{1}{7} \times \frac{1}{2} =$ _____

8. $\frac{2}{3} \times \frac{4}{9} = \frac{8}{27}$ _____

9. $\frac{5}{8} \times \frac{3}{8} =$ _____

10. $\frac{1}{2} \times \frac{4}{13} =$ _____

11. $\frac{1}{3} \times \frac{2}{7} =$ _____

12. $\frac{13}{15} \times \frac{1}{4} = \frac{13}{\cancel{5}216}$ _____

13. $\frac{2}{5} \times \frac{4}{5} =$ _____

14. $\frac{1}{11} \times \frac{2}{5} =$ _____

15. $\frac{7}{9} \times \frac{2}{11} =$ _____

16. $\frac{3}{4} \times \frac{1}{2} = \frac{3}{8}$ _____

17. $\frac{1}{2} \times \frac{14}{15} =$ _____

18. $\frac{1}{5} \times \frac{1}{3} =$ _____

19. $\frac{11}{15} \times \frac{1}{10} =$ _____

20. $\frac{8}{9} \times \frac{2}{7} = \frac{16}{63}$ _____

21. $\frac{7}{8} \times \frac{11}{14} =$ _____

22. $\frac{1}{2} \times \frac{5}{7} =$ _____

23. $\frac{3}{4} \times \frac{1}{3} =$ _____

24. $\frac{1}{2} \times \frac{7}{8} = \frac{7}{16}$ _____

25. $\frac{12}{13} \times \frac{3}{10} =$ _____

26. $\frac{2}{3} \times \frac{1}{3} =$ _____

27. $\frac{2}{3} \times \frac{7}{9} =$ _____

Solve.

28. The total weight of all of the insects in the world is about $\frac{7}{20}$ billion tons. The total weight of all humans is about $\frac{1}{3}$ of this amount. Find the total weight of all humans.

    $\frac{7}{60}$ billion tons

29. A recipe for granola bars calls for $\frac{2}{3}$ cup of oats. How much of the oats would you use to make $\frac{1}{2}$ of the amount in the original recipe?

$$\frac{7}{20} \times \frac{1}{3} = \frac{7}{60}$$

17

Multiply. Simplify each product.

1. $10 \times \frac{3}{8} =$ _____

2. $12 \times \frac{1}{2} =$ _____

3. $4 \times \frac{2}{5} =$ _____

4. $\frac{4}{5} \times 15 =$ _____

5. $3 \times \frac{11}{12} =$ _____

6. $7 \times \frac{4}{5} =$ _____

7. $\frac{2}{7} \times 6 =$ _____

8. $\frac{2}{3} \times 9 =$ 6

9. $\frac{7}{10} \times 5 =$ _____

10. $9 \times \frac{5}{6} =$ _____

11. $8 \times \frac{2}{3} =$ _____

12. $\frac{1}{4} \times 16 =$ 4

13. $12 \times \frac{3}{8} =$ _____

14. $\frac{3}{4} \times 6 =$ _____

15. $\frac{3}{8} \times 8 =$ _____

16. $\frac{2}{3} \times 12 =$ 8

17. $2 \times \frac{5}{12} =$ _____

18. $4 \times \frac{5}{8} =$ _____

19. $3 \times \frac{8}{9} =$ _____

20. $\frac{3}{10} \times 5 =$ $\frac{3}{2}$ ⟶ $1\frac{1}{2}$

21. $8 \times \frac{5}{12} =$ _____

22. $\frac{1}{6} \times 9 =$ _____

23. $6 \times \frac{4}{6} =$ _____

24. $12 \times \frac{5}{8} =$ $7\frac{1}{2}$

Solve.

25. Amal's bones make up about $\frac{1}{5}$ of his body weight. He weighs 140 pounds. How many pounds do his bones weigh? _____

26. Jessica bought a 5-gallon can of paint. After painting her room, $\frac{2}{5}$ of the paint was left. How many gallons of paint did she use? _____

18

Multiply. Simplify each product.

1. $3\frac{3}{4} \times 2\frac{1}{2} =$ _____

2. $1\frac{3}{8} \times 2\frac{1}{4} = \frac{99}{32} \to 3\frac{3}{32}$

3. $5 \times 2\frac{1}{8} =$ _____

4. $3\frac{2}{3} \times 1\frac{1}{2} = 5\frac{1}{2}$

5. $\frac{1}{3} \times 2\frac{5}{6} =$ _____

6. $2\frac{1}{5} \times 1\frac{5}{6} = \frac{121}{30} \to 4\frac{1}{30}$

7. $3\frac{1}{4} \times 2\frac{2}{3} =$ _____

8. $2 \times 1\frac{3}{10} = \frac{13}{5} \to 2\frac{3}{5}$

9. $1\frac{2}{5} \times 3\frac{1}{3} =$ _____

10. $1\frac{5}{6} \times 3\frac{1}{5} = \frac{56}{15} \to 3\frac{11}{15}$

11. $4 \times 3\frac{1}{3} =$ _____

12. $6\frac{1}{2} \times 1\frac{3}{5} = \frac{52}{5} \to 10\frac{2}{5}$

13. $4\frac{1}{2} \times 1\frac{1}{4} =$ _____

14. $1\frac{3}{4} \times 5 = \frac{35}{4} \to 8\frac{3}{4}$

15. $1\frac{1}{8} \times 2\frac{1}{6} =$ _____

16. $3 \times 3\frac{1}{6} = 9\frac{1}{2}$

17. $1\frac{1}{4} \times 5\frac{1}{3} =$ _____

18. $2\frac{2}{5} \times 1\frac{1}{2} = \frac{18}{5} \to 3\frac{3}{5}$

19. $4\frac{2}{3} \times 1\frac{1}{8} =$ _____

20. $3\frac{3}{4} \times 4\frac{1}{5} = \frac{63}{4} \to 15\frac{3}{4}$

21. $\frac{2}{3} \times 2\frac{1}{2} =$ _____

22. $2\frac{1}{4} \times 5\frac{2}{3} = \frac{51}{4} \to 12\frac{3}{4}$

23. $2\frac{2}{3} \times 6\frac{1}{2} =$ _____

24. $1\frac{1}{8} \times 6 = \frac{27}{4} \to 6\frac{3}{4}$

Solve.

25. A certain granola cereal has 240 calories in each 1 cup serving. How many calories are in a serving of $1\frac{1}{3}$ cups of the cereal? _____

26. Samantha earns $18 per hour. How much will she earn if she works for $12\frac{3}{4}$ hours? $229.50

19

THAT FISH WAS HOW BIG?

Brianna, Nan, Simon, and Jason went on a fishing trip to Lake Pardenpu. While there they decided to keep a record of the biggest fish that they could catch. Since the four friends were not going to stuff, clean, or eat what they caught, they planned to measure the length of their catch, then return them to the lake. To determine the weight of the fish that they caught they asked a state naturalist to tell them how much the big fish would weigh on average in ounces per inch.

The state naturalist gave them the following information about the fish in Lake Pardenpu.

Name of fish	Typical lengths in inches	Weight in ounces per inch
Bass, Smallmouth	15 – 25	$5\frac{15}{16}$
Bluegill Sunfish	8 – 15	$4\frac{3}{4}$
Bowfin	15 – 32	$7\frac{5}{8}$
Catfish, flathead	15 – 35	$16\frac{11}{16}$
Crappie, white	10 – 20	$3\frac{3}{8}$
Walleye	18 – 36	$8\frac{4}{5}$

For example: If Brianna caught a $10\frac{1}{2}$ inch bluegill sunfish, she would calculate its weight as $10\frac{1}{2}$ inches times $4\frac{3}{4}$ ounces per inch = $49\frac{7}{8}$ ounces.

Using the information in the chart above, calculate the weight of each fish caught.

BRIANNA

X BASS – 18⅜": _____

C BLUEGILL – 10½": _____

X CRAPPIE – 16½": _____

SIMON

X BOWFIN – 15¼": _____

X CATFISH – 21⅜": _____

X WALLEYE – 30⅚": _____

NAN

X BASS – 19⅛": _____

X BOWFIN – 27⅔": _____

X CRAPPIE – 14⅝": _____

JASON

X BLUE GILL – 12¾": _____

X CATFISH – 23⅓": _____

X WALLEYE – 29⅞": _____

20

WHAT'S COOKIN' ON THE CAMPFIRE?

A group of guys packed up for a weekend campout. They put Evan in charge of the food. He brought a recipe book that belonged to a cook at a camp. But there was a problem. The cook wrote these recipes when he was cooking in the military, so the recipes make enough food to feed an army. Reduce his recipes to the quantities listed. A group of only (10) campers will be going on the campout.

table

WARM YOU UP CHILI FOR 20

10 1/2 pound of hamburger $5\frac{1}{4}$
2 1/3 onions $1\frac{1}{6}$
3 1/2 green peppers $1\frac{3}{4}$
5 1/4 pound of tomatoes $3\frac{5}{8}$
6 3/4 T of chili powder $3\frac{3}{8}$
6 1/2 cans of tomato sauce $3\frac{1}{4}$
4 1/2 cans of beans $4\frac{1}{4}$

Chili for Ten

$\frac{2}{4}\frac{1}{4}$

$9\frac{4}{8}\frac{1}{8}$

$3\ 2\sqrt{\frac{5}{8}}$

BACK WOODS POTATO SALAD FOR 30 $\frac{1}{3}$

9 1/2 lb. of potatoes $3\frac{1}{6}$
3 lb. of onions 1
2 1/2 lb. of celery $\frac{5}{6}$
12 1/3 ounces of pickle relish $4\frac{1}{6}$
12 eggs 4
4 1/2 cups of mayonnaise $3\frac{3}{4}$
1/2 c. of mustard $\frac{1}{6}$
2 1/2 T. of salt $\frac{5}{6}\ \frac{7}{12}$
1 3/4 T. of pepper $\frac{7}{12}$
3/4 T of paprika $\frac{1}{4}$

Potato Salad for Ten

$\frac{1}{2}\ \frac{1}{3}$ 　　 $\frac{7}{4}\ \frac{1}{3}\ \frac{7}{12}$

$\frac{5}{2}\ \frac{1}{3}\ \frac{5}{6}$ 　 $1\frac{D}{4}\ \frac{1}{8}\ 1$

$\frac{1}{3}\frac{1}{3}$

$3\frac{9}{4}\ \frac{1}{8}\ 1\ \frac{3}{4}$

CRUNCHY APPLE CRISP FOR 20

12 lb. of apples 6 lbs
5 1/4 pound of brown sugar $3\frac{5}{8}$
8 1/3 cups of oatmeal $4\frac{1}{7}$
2 1/4 lb. of butter $1\frac{1}{8}$
2 1/2 T of cinnamon $1\frac{1}{4}$
1 3/4 t. of nutmeg $\frac{7}{8}$

Apple Crisp for Ten

$3\frac{1}{2}\ \frac{1}{8}$

$\frac{4}{8}\ \frac{3}{8}$

PEPPERMINT S'MORE BARS FOR 100

25 1/2 cups broken chocolate bars $2\frac{11}{26}$
55 cups crushed graham crackers $5\frac{1}{2}$
3 1/3 pounds marshmallows $\frac{1}{3}$
3 3/4 cups crushed peppermint candy $\frac{7}{8}$

S'Mores for Ten

$\frac{51}{2}\ \frac{1}{10}\ \frac{11}{20}$

$1\frac{18}{3}\ \frac{1}{10}1\ \frac{8}{4}\ \frac{1}{2}\ \frac{3}{8}$

Write the reciprocal of each number.

1. $\frac{2}{3} =$ _$\frac{3}{2}$_

2. $\frac{1}{8} =$ _$\frac{8}{1}$_

3. $\frac{4}{7} =$ _$\frac{7}{4}$_

4. $2\frac{1}{2} =$ _$\frac{2}{5}$_

5. $\frac{1}{4} =$ _$\frac{4}{1}$_

6. $5 =$ _$\frac{1}{5}$_

Divide. Simplify each quotient.

7. $11 \div \frac{1}{7} = \frac{11}{7}$ ____

8. $6 \div \frac{1}{3} = \frac{18}{1}$ _18_

9. $3 \div \frac{5}{8} = \frac{27}{5}$ $5\frac{2}{5}$

10. $7 \div \frac{2}{3} = \frac{21}{2}$ $10\frac{1}{2}$

11. $4 \div \frac{3}{4} = \frac{16}{3}$ ____

12. $11 \div \frac{3}{4} = \frac{44}{3}$ $14\frac{2}{3}$

13. $5 \div \frac{2}{9} = \frac{45}{2}$ ____

14. $7 \div \frac{8}{9} =$ ____

15. $8 \div \frac{1}{3} =$ ____

16. $10 \div \frac{2}{9} = \frac{45}{1}$ 45

17. $6 \div \frac{1}{2} =$ ____

18. $7 \div \frac{2}{9} =$ ____

19. $12 \div \frac{1}{3} =$ ____

20. $8 \div \frac{3}{7} = \frac{56}{3}$ $18\frac{2}{3}$

21. $5 \div \frac{2}{5} =$ ____

22. $8 \div \frac{1}{7} =$ ____

23. $8 \div \frac{1}{3} =$ ____

24. $5 \div \frac{2}{3} = \frac{15}{2}$ $7\frac{1}{2}$

25. $3 \div \frac{1}{3} =$ ____

26. $6 \div \frac{1}{5} =$ ____

27. $4 \div \frac{2}{5} =$ ____

Solve.

28. A baby walrus is 4 feet long. This is $\frac{2}{5}$ of the length of an adult male. What is the length of an adult male walrus? _10 ft_

29. One yard (36 inches) is equal to $\frac{2}{11}$ of a rod. How many inches are in a rod? ____

$\frac{4}{1} \quad \frac{5}{2} \quad \frac{10}{1} = 10 \text{ ft}$

22

Divide. Write each quotient in simplest form.

1. $\frac{1}{2} \div \frac{7}{10} = $ _____

2. $\frac{5}{12} \div \frac{1}{6} = $ _____

3. $\frac{4}{7} \div \frac{2}{3} = $ _____

4. $\frac{5}{6} \div \frac{1}{4} = $ _____

5. $\frac{9}{11} \div \frac{3}{7} = $ _____

6. $\frac{3}{4} \div \frac{5}{8} = $ _____

7. $\frac{1}{6} \div \frac{5}{8} = $ _____

8. $\frac{3}{4} \div \frac{1}{6} = $ _____

9. $\frac{11}{12} \div \frac{1}{4} = $ _____

10. $\frac{3}{4} \div \frac{5}{12} = $ _____

11. $\frac{7}{12} \div \frac{2}{3} = $ _____

12. $\frac{5}{8} \div \frac{1}{6} = $ _____

13. $\frac{5}{6} \div \frac{3}{10} = $ _____

14. $\frac{2}{5} \div \frac{3}{10} = $ _____

15. $\frac{4}{5} \div \frac{2}{7} = $ _____

16. $\frac{2}{3} \div \frac{4}{9} = $ _____

17. $\frac{5}{9} \div \frac{1}{3} = $ _____

18. $\frac{1}{4} \div \frac{7}{8} = $ _____

Solve.

19. A soup recipe calls for $\frac{3}{8}$ of a cup of olive oil. One tablespoon is equal to $\frac{1}{16}$ of a cup. How many tablespoons of olive oil are needed to make the soup? _____

20. A sheet of posterboard is $\frac{1}{24}$ in. thick. How many sheets of this posterboard are needed to make a stack $\frac{3}{4}$ in. high? _____ 18 sheets

23

Divide. Simplify each quotient.

1. $\frac{3}{5} \div 5 = \frac{3}{25}$

2. $\frac{2}{7} \div 4 = \frac{1}{7}$

3. $\frac{9}{11} \div 3 = \frac{3}{11}$

4. $\frac{2}{3} \div 10 = \frac{1}{15}$

5. $\frac{3}{4} \div 12 = \frac{1}{16}$

6. $\frac{4}{5} \div 10 = \frac{2}{25}$

7. $\frac{1}{6} \div 3 = \frac{1}{18}$

8. $\frac{3}{5} \div 2 = \frac{3}{10}$

9. $\frac{6}{11} \div 4 = \frac{3}{11}$

10. $\frac{3}{5} \div 4 = \frac{3}{20}$

11. $\frac{5}{9} \div 10 = $ _____

12. $\frac{3}{8} \div 6 = \frac{1}{16}$

13. $\frac{3}{8} \div 9 = $ _____

14. $\frac{5}{6} \div 2 = $ _____

15. $\frac{3}{4} \div 4 = $ _____

16. $\frac{3}{10} \div 6 = \frac{1}{20}$

17. $\frac{4}{11} \div 6 = $ _____

18. $\frac{4}{5} \div 8 = $ _____

19. $\frac{5}{12} \div 10 = $ _____

20. $\frac{6}{7} \div 9 = \frac{2}{21}$

21. $\frac{6}{7} \div 3 = $ _____

22. $\frac{2}{3} \div 5 = $ _____

23. $\frac{5}{6} \div 3 = $ _____

24. $\frac{5}{8} \div 2 = \frac{5}{16}$

Solve.

25. A carpenter cuts a board that is $\frac{3}{4}$ meter long into 6 pieces of equal length. How long is each piece? _____

26. Toni wants to store $\frac{1}{2}$ gallon of sauce in 5 containers. If she wants each container to have the same amount of sauce, how much should she put in each container? _____

24

Divide. Simplify each quotient.

1. $1\frac{4}{5} \div \frac{1}{3} =$ _____

2. $1\frac{2}{3} \div \frac{1}{8} =$ _____

3. $3\frac{4}{7} \div 3\frac{1}{2} =$ _____

4. $3\frac{4}{5} \div 1\frac{5}{7} =$ _____

5. $\frac{2}{5} \div 4\frac{3}{5} =$ _____

6. $4\frac{1}{8} \div \frac{3}{7} =$ _____

7. $2\frac{1}{2} \div 4\frac{2}{5} =$ _____

8. $2\frac{4}{5} \div 7 = \frac{2}{5}$

9. $\frac{5}{6} \div 1\frac{3}{4} =$ _____

10. $\frac{1}{3} \div 2\frac{1}{6} =$ _____

11. $1\frac{4}{9} \div \frac{6}{7} =$ _____

12. $1\frac{3}{4} \div \frac{4}{5} = \frac{35}{16} = 2\frac{3}{16}$

13. $5 \div 3\frac{1}{4} =$ _____

14. $2\frac{1}{4} \div 3\frac{4}{9} =$ _____

15. $4\frac{2}{7} \div 1\frac{1}{6} =$ _____

16. $\frac{8}{9} \div 2\frac{5}{7} = \frac{56}{171}$

17. $1\frac{1}{4} \div 2\frac{2}{3} =$ _____

18. $\frac{1}{4} \div 1\frac{5}{9} =$ _____

19. $2\frac{1}{4} \div 2\frac{1}{4} =$ _____

20. $1\frac{7}{8} \div 1\frac{1}{4} = \frac{3}{2} \to 1\frac{1}{2}$

21. $1\frac{3}{4} \div \frac{1}{5} =$ _____

22. $4\frac{2}{7} \div 1\frac{1}{2} =$ _____

23. $5\frac{1}{7} \div 2\frac{1}{2} =$ _____

24. $1\frac{10}{9} \div 3 = \frac{10}{27}$

25. $1 \div 3\frac{5}{7} =$ _____

26. $1\frac{1}{3} \div 1\frac{2}{3} =$ _____

27. $1\frac{1}{2} \div 2\frac{3}{4} =$ _____

Solve.

28. Tom made $2\frac{1}{2}$ batches of cookies. He used $6\frac{2}{3}$ cups of flour. How much flour is used to make 1 batch?

$2\frac{2}{3}$ cups

29. Sonya has $3\frac{1}{3}$ yards of fabric that she wants to cut into 6 pieces of the same length. How long should she cut each piece?

_____

Model

$6\frac{2}{3} \div 2\frac{1}{2}$

$\frac{20}{3} \div \frac{5}{2}$

$\frac{20}{3} \times \frac{2}{5} , \frac{8}{3} \left(2\frac{2}{3}\right)$

25

Solve each problem. ~Draw a Picture~

1. A recipe for papaya ice cream calls for $\frac{1}{4}$ cup of lemon juice and $1\frac{1}{2}$ cups of ripe papaya. How much of each ingredient is needed to make $\frac{1}{2}$ of the recipe? ___$\frac{1}{8}$ cups lemon $\frac{3}{4}$ cups rice___

2. There are 48 people who have signed up to attend the midnight barbecue at the Rainbow Canyon Recreation Center. The chef wants to make enough burgers so that each person can have $1\frac{1}{2}$ burgers.

   a. How many burgers should he make? ___72 burgers___

   b. He uses $\frac{1}{4}$ pound of beef in each burger. How much ground beef should he order? ___18 lbs___

3. Marvin can do one load of laundry with $\frac{1}{16}$ box of laundry detergent. How many loads of laundry can he wash with 4 boxes of the detergent? ___64 loads___

4. Adriana cuts 4 apples into eighths and 3 pears into sixths to make a fruit salad. How many pieces of apple and pear does she have in the salad? ___50 pieces___

5. There are 12 swings at the park. Of the swings, $\frac{3}{4}$ have plastic seats. One third of the plastic seats are green. How many of the swings have green seats? ___3 seats___

6. Pietro used an eight-foot board to cut 3 shelves. Each shelf was $2\frac{1}{2}$ feet long.

   a. How much board did the 3 shelves use? ___$7\frac{1}{2}$ ft___

#1. $\frac{1}{4} \times \frac{1}{2} \times \frac{1}{8}$ $\frac{3}{2} \times \frac{1}{2} = \frac{3}{4}$ #2. $48 \times 1\frac{1}{2}$ $\frac{48}{1} \times \frac{3}{2} = \frac{72}{1} \rightarrow 72$ #3 $72 \times \frac{1}{4}$ $\frac{18}{72} \times \frac{1}{4} = \frac{13}{1}$ $2\overline{)72}^{36}$

#3 How do it w/ fractions
$16 \times 4 = 64$
$\frac{16}{\times 4}$
$\overline{64}$

#4 $(4 \times 8) + (3 \times 6)$
$32 + 18$
50

#5 $12 \times \frac{3}{4}$
$\frac{3}{1} \cdot \frac{N}{1} \cdot \frac{3}{4} = \frac{9}{1} \rightarrow 9 \times \frac{1}{3}$
$\frac{3}{1} \times \frac{1}{3} = \frac{3}{1} = 3$

#6
$2\frac{1}{2} \times 3$
$\frac{5}{2} \times \frac{3}{1} = \frac{15}{2} \rightarrow 7\frac{1}{2}$

26

NAME _Michael Plasmeier_

DAFFY DEFINITIONS

DIRECTIONS: First, solve each problem below. Second, find your answer in the secret code. Third, each time your answer appears in the secret code, write the letter of the problem above it.

1. $\frac{15}{2} = 7\frac{1}{2}$ G

2. $\frac{8}{3} = 2\frac{2}{3}$ T

3. $\frac{21}{5} = 4\frac{1}{5}$ C

4. $\frac{9}{3} = 3$ M

5. $\frac{14}{3} = 4\frac{2}{3}$ L

6. $\frac{10}{2} = 5$ O

7. $\frac{22}{7} = 3\frac{1}{7}$ U

8. $\frac{36}{8} = 4\frac{1}{2}$ R

9. $\frac{13}{9} = 1\frac{4}{9}$ S

10. $\frac{22}{6} = 3\frac{2}{3}$ K

11. $\frac{72}{8} = 9$ I

12. $\frac{100}{50} = 2$ H

13. $\frac{43}{7} = 6\frac{1}{7}$ A

14. $\frac{34}{5} = 6\frac{4}{5}$ F

15. $\frac{33}{10} = 3\frac{3}{10}$ E

16. $\frac{22}{16} = 1\frac{3}{8}$ N

17. $\frac{42}{15} = 2\frac{4}{5}$ X

18. $\frac{31}{10} = 3\frac{1}{10}$ Y

METRIC COOKIE:

$\underset{6\frac{1}{7}}{A}$ $\underset{7\frac{1}{2}}{G}$ $\underset{4\frac{1}{2}}{R}$ $\underset{6\frac{1}{7}}{A}$ $\underset{3}{M}$

$\underset{4\frac{1}{5}}{C}$ $\underset{4\frac{1}{2}}{R}$ $\underset{6\frac{1}{7}}{A}$ $\underset{4\frac{1}{5}}{C}$ $\underset{3\frac{2}{3}}{K}$ $\underset{3\frac{3}{10}}{E}$ $\underset{4\frac{1}{2}}{R}$

DECLARATION OF INDEPENDENCE:

$\underset{6\frac{1}{7}}{A}$ $\underset{1\frac{3}{8}}{N}$ $\underset{5}{O}$ $\underset{2\frac{2}{3}}{T}$ $\underset{3\frac{3}{10}}{E}$

$\underset{3\frac{3}{10}}{E}$ $\underset{2\frac{4}{5}}{X}$ $\underset{4\frac{1}{5}}{C}$ $\underset{3\frac{1}{7}}{U}$ $\underset{1\frac{4}{9}}{S}$ $\underset{9}{I}$ $\underset{1\frac{3}{8}}{N}$ $\underset{7\frac{1}{2}}{G}$

$\underset{3\frac{1}{10}}{Y}$ $\underset{5}{O}$ $\underset{3\frac{1}{7}}{U}$ $\underset{6\frac{4}{5}}{F}$ $\underset{4\frac{1}{2}}{R}$ $\underset{5}{O}$ $\underset{3}{M}$

$\underset{1\frac{4}{9}}{S}$ $\underset{4\frac{1}{5}}{C}$ $\underset{2}{H}$ $\underset{5}{O}$ $\underset{5}{O}$ $\underset{4\frac{2}{3}}{L}$

Finding equivalent fractions

NAME_____

What does a worm do in a corn field?

DIRECTIONS: First, solve each problem below. Second, find your answer in the secret code. Third, each time your answer appears in the secret code, write the letter of the problem above it.

1. $\dfrac{5}{8} = \dfrac{15}{24}$ (S)

2. $\dfrac{4}{3} = \dfrac{8}{6}$ (T)

3. $\dfrac{3}{5} = \dfrac{12}{20}$ (R)

4. $\dfrac{1}{8} = \dfrac{4}{32}$ (D)

5. $\dfrac{7}{8} = \dfrac{14}{16}$ (H)

6. $\dfrac{2}{3} = \dfrac{8}{12}$ (E)

7. $\dfrac{1}{4} = \dfrac{3}{12}$ (N)

8. $\dfrac{2}{5} = \dfrac{8}{20}$ (G)

9. $\dfrac{0}{4} = \dfrac{0}{8}$ (A)

10. $\dfrac{1}{1} = \dfrac{7}{7}$ (O)

11. $\dfrac{1}{3} = \dfrac{3}{9}$ (U)

12. $\dfrac{3}{8} = \dfrac{9}{24}$ (I)

H E   G O E S
16 12   8 7 12 15

I N   O N E
24 3   7 3 12

F A R   A N D
12 0 20   0 3 4

O U T   T H E
7 9 6   6 16 12

O T H E R
7 6 16 12 20

What Do You Call a Steer With 2 Short Legs and 2 Long Legs?

Find each correct answer at the bottom of the page and cross out the letter above it. The answer to the title question will remain.

1 A railroad construction crew can lay $1\frac{1}{4}$ mi of track in one day. At that rate, how many miles of track can be laid in 10 days?

$1\frac{1}{4} \times 10$

$\boxed{12\frac{1}{2} \text{ mi track}}$

2 A railroad construction crew can lay $1\frac{1}{4}$ mi of track in one day. At that rate, how many days will it take to lay 10 mi of track?

$(0 \div 1\frac{1}{4})$

$\boxed{8 \text{ days}}$

3 A gasoline pump delivers $3\frac{3}{5}$ gal of gas per minute. How long will it take to fill a gas tank that holds $13\frac{1}{2}$ gal?

$\boxed{3\frac{3}{4} \text{ minutes}}$

4 Doug has been wondering where the 24 hours in a day goes. On Monday, he spent $\frac{1}{3}$ of the day sleeping, $\frac{1}{4}$ of the day in school, and $\frac{1}{8}$ of the day at soccer practice. How much time was left for other activities?

$\frac{1}{3} + \frac{1}{4} + \frac{1}{8}$

$\boxed{7 \text{ hours}}$

5 Ms. Snuggle divided $2\frac{1}{2}$ lb of meat into 8 hamburger patties. What is the average amount of meat in each patty?

$2\frac{1}{2} \div 8$

$\frac{5}{2} \times \frac{1}{8}$ $\boxed{\frac{5}{16} \text{ lb}}$

6 An ultra marathon athlete can run long distances at an average speed of $7\frac{1}{2}$ miles per hour. At that rate, how long will it take him to run 50 miles?

$50 \div 7\frac{1}{2}$ — Convert error

$\boxed{8\frac{2}{3} \text{ hr}}$

7 A broken pipe was leaking $1\frac{2}{3}$ gal of water per minute. It took Mr. Wrench $10\frac{1}{2}$ min to stop the leak. How much water was wasted?

Don't reverse $\boxed{17\frac{1}{2} \text{ gal}}$

8 A science workbook is $\frac{3}{4}$ in. thick. How many workbooks will fit on a 2-ft shelf? — Different!

$24 \div \frac{3}{4}$

$\boxed{32 \text{ textbooks}}$

9 Amanda used $\frac{3}{4}$ cup of sugar to make 2 dozen cookies. How much sugar is in each cookie?

$24 \div \frac{3}{4}$

$\boxed{\frac{1}{32} \text{ cups}}$

P	C	L	O	E	G	A	I	N	B	R	E	T	E	O	F	N
8 d	$17\frac{1}{2}$ gal	$\frac{1}{8}$ c	$\frac{5}{16}$ lb	14 mi	$\frac{1}{32}$ c	$7\frac{1}{2}$ d	$3\frac{3}{4}$ min	28	$8\frac{1}{2}$ h	32	$\frac{3}{8}$ lb	$6\frac{2}{3}$ h	$4\frac{1}{2}$ min	$12\frac{1}{2}$ mi	$15\frac{3}{4}$ gal	7 h

CLAWBETEFA

LEAN BEEF

Problem Solving with Fractions:
Multiply and Divide Fractions

Show process below and be sure to simplify answers.

$1 \Rightarrow \frac{7}{9} + \frac{5}{9}$ ___ $1\frac{1}{3}$

$2 \Rightarrow \frac{7}{8} + \frac{3}{4}$ ___ $1\frac{5}{8}$

$3 \Rightarrow \frac{4}{15} + \frac{7}{10}$ ___ $\frac{29}{30}$

$4 \Rightarrow 8\frac{1}{2} + 7\frac{3}{4}$ ___ $16\frac{1}{4}$

$5 \Rightarrow 12\frac{5}{6} + 9\frac{9}{10}$ ___ $22\frac{4}{15}$

$6 \Rightarrow 8\frac{2}{3} + 7\frac{3}{4} + 5\frac{5}{6}$ ___ $22\frac{1}{4}$

$7 \Rightarrow 9\frac{7}{12} + 8\frac{2}{9} + 4\frac{5}{8}$ ___ $22\frac{7}{22}$

$8 \Rightarrow 15\frac{2}{3} + 7\frac{1}{4} + 9\frac{5}{6} + 3\frac{7}{8}$

$36\frac{5}{8}$ ___ $37\frac{5}{8}$

$9 \Rightarrow \frac{14}{15} - \frac{4}{15}$ ___ $\frac{2}{3}$

$10 \Rightarrow \frac{11}{16} - \frac{1}{8}$ ___ $\frac{9}{16}$

$11 \Rightarrow \frac{8}{9} - \frac{7}{12}$ ___ $\frac{11}{36}$

$12 \Rightarrow 9\frac{2}{3} - 6\frac{1}{6}$ ___ $3\frac{1}{2}$

$13 \Rightarrow 15\frac{1}{2} - 5\frac{7}{8}$ ___ $9\frac{5}{8}$

$14 \Rightarrow 18 - 7\frac{4}{5}$ ___ $10\frac{1}{5}$

$15 \Rightarrow 30\frac{3}{4} - 18\frac{9}{10}$ ___ $11\frac{17}{20}$

Show work here. Do it neatly and # each problem.
Use the back if you need more space.

#1) $\frac{7}{9}$ $\frac{12}{9} \Rightarrow 1\frac{3}{9} \Rightarrow \boxed{1\frac{1}{3}}$
$\frac{5}{9}$

#2) $\frac{7}{8}, \frac{7}{8}$ $\frac{13}{8}$ ⟶ $\boxed{1\frac{5}{8}}$
$\frac{3}{4}, \frac{6}{8}$

#3) $\frac{4}{15}, \frac{8}{30}$ $\frac{29}{30}$
$\frac{7}{10}, \frac{21}{30}$

#4) $8\frac{1}{2} + 7\frac{3}{4}$ $16 R1$ $4\overline{)65}$
$\frac{17}{2}$ $\frac{34}{4}$
$\frac{31}{4}$ $\frac{34}{4}$ $\frac{65}{4} \Rightarrow 16 R1 \Rightarrow 16\frac{1}{4}$

#5) $17\frac{6}{6} + 9\frac{9}{10}$ $9\frac{7}{10}$ $\frac{27}{30}$
$\frac{50}{30} + \frac{21}{30}$
$22\frac{27}{30} \Leftarrow 21\frac{57}{30}$
$22\frac{11}{5}$ $22\frac{1}{4} \Leftarrow 22\frac{3}{12}$

#6) $8\frac{2}{3}$ $\frac{4}{6}$ $\frac{8}{12}$
$7\frac{3}{4}$ $\frac{9}{12}$
$5\frac{5}{6}$ $\frac{10}{12}$
$\Leftarrow 26\frac{27}{12}$

#7) $9\frac{7}{12}, 6$ $\frac{42}{72}$
$8\frac{7}{9}, 8$ $\frac{66}{72}$
$4\frac{5}{8}, 9$ $\frac{45}{72}$
$21\frac{143}{72}$ $\frac{143}{72}$ ⟶ $\frac{71}{72}$ $21\frac{143}{72}$ $\boxed{22\frac{71}{72}}$

#8) $15\frac{2}{3}$ $\frac{4}{6}$ $24\frac{9}{6} \Rightarrow 26\frac{6}{2} \Rightarrow 26\frac{4}{8}$
$7\frac{1}{4}$ $\frac{2}{8}$
$9\frac{5}{6}$ $10\frac{1}{8} \Rightarrow 11\frac{1}{8}$
$3\frac{7}{8}$ $\boxed{37\frac{5}{8}}$

#9) $\frac{14}{15}$ $10\frac{11}{16}$ $\frac{11}{16}$
$-\frac{4}{15}$ $\frac{1}{8}, \frac{2}{16}$
$\frac{10}{15} \Rightarrow \frac{2}{3}$ $\frac{9}{16}$

#11) $\frac{8}{9}, 4$ $\frac{32}{36}$
$\frac{7}{12} \Rightarrow 3$ $\frac{21}{36}$
$\frac{11}{36}$

#12) $9\frac{2}{3}$ $\frac{4}{6}$
$-6\frac{1}{6}$ $\frac{1}{6}$
3 $\frac{3}{6}$ $3\frac{1}{2}$

#13) $15\frac{1}{2}$ $\frac{4}{8}$
$-5\frac{7}{8}$ $\frac{7}{8}$
9 $\frac{5}{8}$

#14) 18 $-17\frac{5}{5}$
$7\frac{4}{5}$ $7\frac{4}{5}$
$10\frac{1}{5}$

#15) $30\frac{3}{4}$
$18\frac{9}{10}$
$11\frac{17}{20}$

Did You Hear About...

A The	B Kid	C Who	D Told	E His	F Mother	G Not	H To
							(out)
J Him	K New	L Underwear Because	M New	N It's	O Never	P Warm Out	Q Out
							?

Do each exercise and find your answer in one of the answer columns. Notice the word next to the answer. Write this word in the box containing the letter of the exercise.

(A) $2\frac{2}{3} \times 1\frac{3}{4}$ $4\frac{2}{3}$

(B) $1\frac{7}{8} \times 2\frac{2}{5}$ $4\frac{1}{2}$

(C) $3\frac{1}{2} \times 3\frac{1}{2}$ $12\frac{1}{4}$

(D) $5\frac{1}{3} \times 1\frac{3}{8}$ $7\frac{1}{3}$

(E) $4\frac{4}{5} \times 2\frac{1}{12}$ 10

(F) $3\frac{1}{7} \times 1\frac{3}{6}$ $3\frac{2}{3}$

(G) $1\frac{3}{10} \times 6$ $7\frac{4}{5}$

(H) $2\frac{3}{4} \times 18$ $49\frac{1}{2}$

(I) $2\frac{7}{10} \times \frac{5}{6}$ $2\frac{1}{4}$

(J) $4\frac{1}{2} \times 4\frac{5}{9}$ $26\frac{1}{2}$ $20\frac{1}{2}$

(K) $3\frac{2}{3} \times 1\frac{1}{4}$ $4\frac{7}{12}$

(L) $5\frac{5}{8} \times 9\frac{3}{5}$ 54

(M) $7\frac{1}{2} \times 1\frac{1}{3} \times \frac{7}{12}$ $5\frac{5}{6}$

(N) $4\frac{9}{10} \times \frac{4}{7} \times 20$ 56

(O) In an endurance race, Philip ran for $3\frac{3}{4}$ hours at an average speed of $9\frac{3}{5}$ miles per hour. How far did he run? 36 mi

(P) A box of 100 nails weighs $1\frac{5}{8}$ pounds. Mark used $3\frac{1}{3}$ boxes of nails to build a 2-story treehouse. How many pounds of nails did he use? $4\frac{5}{12}$ lb

(Q) There are 3 starfighters and 10 aliens in the play "Space Trek." Each alien costume takes $2\frac{1}{4}$ yards of material. How much material is needed for all the alien costumes? $27\frac{1}{2}$ yd $22\frac{1}{2}$

Answer columns:

| 54 UNDERWEAR |
| $23\frac{1}{4}$ HERE |
| $4\frac{1}{2}$ KID |
| $4\frac{5}{8}$ HOLES |
| $3\frac{2}{3}$ MOTHER |
| $49\frac{1}{2}$ TO |
| $22\frac{1}{2}$ OUT |
| $12\frac{1}{4}$ WHO |
| $37\frac{1}{2}$ A |
| $7\frac{4}{5}$ NOT |
| 56 IT'S |
| $2\frac{1}{5}$ GET |

| $5\frac{5}{6}$ BECAUSE |
| 45 TOYS |
| 10 HIS |
| $20\frac{1}{2}$ HIM |
| $4\frac{2}{3}$ THE |
| $5\frac{1}{3}$ BIG |
| 36 NEVER |
| $10\frac{3}{4}$ THAT |
| $2\frac{1}{4}$ BUY |
| $4\frac{7}{12}$ NEW |
| $7\frac{1}{3}$ TOLD |
| $5\frac{5}{12}$ WORN |

MIDDLE SCHOOL MATH WITH PIZZAZZ! BOOK C
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TOPIC 4-h: Multiplying Mixed Numbers

☆ Abracadabra, It's Magic ☆

1. What magic trick does Mr. Utterbunk perform every evening?

H E T U R N S M I N T O G R A C E

$\dfrac{7}{18}$ 1 $\dfrac{2}{8}^{5}$ | $\dfrac{1}{4}$ | 6 | $\dfrac{8}{35}$ | $\dfrac{3}{4}$ | $4\dfrac{4}{7}$ | $\dfrac{5}{12}$ | $\dfrac{8}{9}$ | $6\dfrac{8}{9}$ | 6 | $4\dfrac{4}{7}$ | $\dfrac{3}{10}$ | $\dfrac{3}{7}$ | $1\dfrac{11}{24}$ | $1\dfrac{1}{2}$ | $\dfrac{7}{10}$ | $\dfrac{3}{4}$ | $1\dfrac{11}{24}$ | $\dfrac{7}{10}$ | $2\dfrac{8}{5}^{5}$

2. What did the magician say to the fisherman?

P I T C K Y I L B D D , A N Y A N Y D

$7\dfrac{1}{3}$ 2$\dfrac{2}{9}$ 10$\dfrac{2}{3}$ 1$\dfrac{2}{3}$ 4$\dfrac{11}{24}$ 4$\dfrac{3}{8}$ 2$\dfrac{3}{4}$ 10$\dfrac{2}{3}$ $\dfrac{3}{10}$ 2$\dfrac{7}{9}$ | 9$\dfrac{7}{9}$ 1$\dfrac{11}{24}$ 4$\dfrac{4}{7}$ 2$\dfrac{3}{8}$ | 9$\dfrac{7}{9}$ 1$\dfrac{11}{24}$ 4$\dfrac{4}{7}$ 2$\dfrac{3}{8}$ 10$\dfrac{2}{3}$ $\dfrac{3}{10}$ 2$\dfrac{7}{9}$

To decode the answers to the MAGICAL mysteries:

Do each exercise below and find your answer in the code. Each time the answer appears, write the letter of the exercise above it.

(K) $2\dfrac{2}{3} \div 1\dfrac{3}{5}$

(S) $2\dfrac{1}{4} \div 5\dfrac{2}{5}$

(I) $7\dfrac{7}{12} \div 2\dfrac{5}{8}$

(T) $7\dfrac{4}{5} \div 1\dfrac{3}{10}$

(G) There are 3 boys and 2 girls in the Krunch family. Mr. Krunch bought $3\dfrac{1}{2}$ pounds of candy to divide equally among them. How much candy did each child get?

_____ lb

(E) $4\dfrac{1}{2} \div 1\dfrac{5}{7}$

(O) $3\dfrac{3}{4} \div 12\dfrac{1}{2}$

(Y) $9\dfrac{1}{2} \div 4$

(N) $6 \div 1\dfrac{5}{16}$

(R) $8 \div 10\dfrac{2}{3}$

(U) $2\dfrac{2}{7} \div 10$

(D) $8\dfrac{1}{3} \div 3$

(C) It takes 1 cup of liquid fertilizer to make $7\dfrac{1}{2}$ gallons of spray. How much liquid fertilizer is needed to make 80 gallons of spray?

_____ c

(H) $3\dfrac{1}{3} \div 2\dfrac{2}{5}$

(P) $5\dfrac{1}{2} \div \dfrac{3}{4}$

(A) $4\dfrac{7}{12} \div 3\dfrac{1}{7}$

Quiz -- x,÷ "Fractions"   Name: _Michael Plasmeier_

1) $\frac{3}{8} \times \frac{8}{9} = \boxed{\frac{1}{3}}$	**7)** $8\frac{1}{3} \times \frac{12}{15} \times 6$ $\frac{25}{3} \times \frac{12}{15} \times \frac{6}{1} = \frac{120}{3} \rightarrow \boxed{40}$
2) $\frac{3}{5} \times 15$ $\frac{3}{8} \times \frac{15}{1} = \frac{9}{1} \rightarrow \boxed{9}$	**8)** $15 \div \frac{3}{5}$ $\frac{15}{1} \times \frac{5}{3} = \frac{25}{1} \rightarrow \boxed{25}$
3) $\frac{4}{15} \times \frac{3}{4} = \frac{1}{4} \boxed{\frac{+}{20}}$	**9)** $\frac{2}{7} \div 2$ $\frac{2}{7} \times \frac{1}{2} = \boxed{\frac{1}{7}}$
4) $\frac{3}{4} \times \frac{5}{7} = \boxed{\frac{15}{28}}$	**10)** $\frac{9}{14} \div \frac{3}{4}$ $\frac{9}{14} \times \frac{4}{3} = \boxed{\frac{6}{7}}$
5) $6\frac{3}{8} \times 5\frac{1}{3}$ 9x4=36 I couldn't it was 99. Can't simplfy Here $\frac{49}{8} \times \frac{36}{1} = \frac{28}{1} \rightarrow \boxed{28}$ $31\frac{1}{2}$	**11)** $\frac{1}{4} \div 2\frac{1}{2}$ $\frac{1}{6} \div \frac{5}{2}$ $\frac{1}{36} \times \frac{2}{5} = \boxed{\frac{1}{19}}$
6) $2\frac{2}{3} \times 2\frac{1}{4}$ $\frac{28}{3} \times \frac{10}{4} = \boxed{2\frac{2}{3}}$ 6 ~1 Opps	**12)** $3\frac{1}{2} \div 4\frac{2}{3}$ $\frac{7}{2} \div \frac{14}{3}$ $\frac{7}{2} \times \frac{3}{14} = \boxed{\frac{3}{4}}$

over

Farmer Brown can harvest $2\frac{1}{3}$ acres of corn in 1 day. How many acres of corn can he harvest in $10\frac{1}{2}$ days?

Thurs ✗

$10\frac{1}{2} \times 2\frac{1}{3}$

$\frac{21}{2} \div \frac{7}{3}$

$\frac{3\ 21}{2} \times \frac{3}{X1} = \frac{9}{2} \rightarrow 4\frac{1}{2}$ acres

$24\frac{1}{2}$

.3

Farmer Brown can harvest $2\frac{1}{3}$ acres of corn in 1 day. How many days will it take him to harvest $10\frac{1}{2}$ acres of corn?

$10\frac{1}{2} \div 2\frac{1}{3}$

$\frac{21}{2} \div \frac{7}{3}$

$\frac{3\ 21}{2} \times \frac{3}{X1} = \frac{9}{2} \rightarrow 4\frac{1}{2}$ days

Day 1   Day 2   Day 3

1A   1A   1A   1A   1A   1A   1A

A = Acres

Day 4   Day 5

1A   1A   1A   ½A

See

Buyer

Beware

Type of	Price for 1 Bag a Day for 1 Day	Price for 1 Bag a Day for 1 Week	Price for 1 Bag a Day for 1 Month	Price for 1 Bag a Day for 1 Year

Type of	Price for 1 Bag a Day for 1 Day	Price for 1 Bag a Day for 1 Week	Price for 1 Bag a Day for 1 Month	Price for 1 Bag a Day for 1 Year

Why Did The Coffee Taste Like Mud?

For each exercise, circle the best estimate. Write the letter next to your answer in the box containing the exercise number.

I. Circle the percent that tells about how much of the bar is shaded.

1.
(H) 15%   (U) 40%

2.
(R) 80%   (O) 60%

3.
(T) 25%   (M) 38%

4.
(S) 67%   (P) 52%

5.
(L) 24%   (D) 10%

6.
(A) 90%   (I) 75%

7.
(V) 46%   (Q) 33%

8.
(F) 60%   (T) 75%
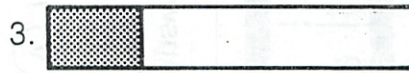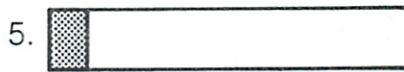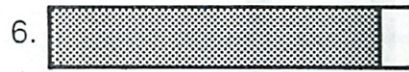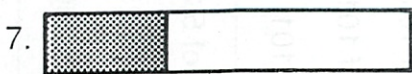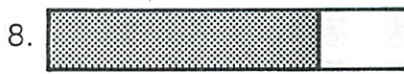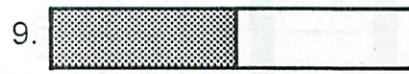
9.
(U) 50%   (R) 5%

II. The circle graphs show the results of a student poll. Circle the best estimate for the percent described.

Favorite Kind of Music

(circle graph with: rock, soul, other)

10. About what percent chose rock music?
   (P) 75%   (S) 55%   (L) 40%

11. About what percent chose soul music?
   (W) 12%   (F) 2%   (H) 23%

12. About what percent chose other kinds of music?
   (L) 46%   (G) 33%   (T) 67%
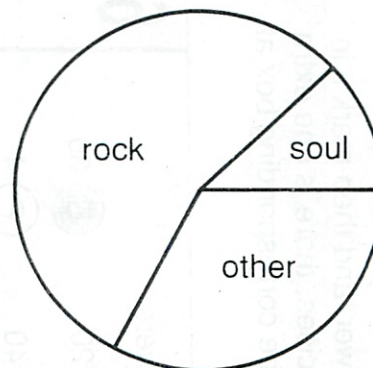
13. About what percent chose hot dogs?
   (C) 38%   (H) 15%   (J) 25%

14. About what percent chose pizza?
   (S) 60%   (L) 50%   (N) 45%

15. About what percent chose chicken?
   (R) 15%   (E) 26%   (A) 4%

Favorite School Lunch

(circle graph with: hot dogs, chicken, pizza, other)
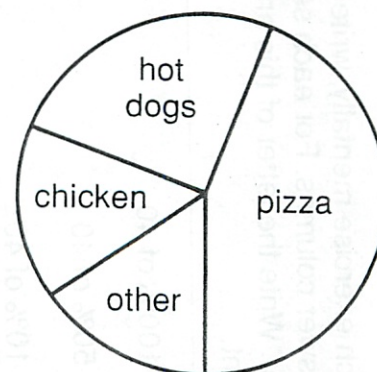
2	8		11	6	4		13	1	10	3		12	15	7	9	14	5
I	T		W	A	S		J	H	S	T		G	E	O	U	N	P

What Did Olga's Uncle Give Her For Cold Feet?

6	3	10	7	+t	9	5-	2	8	4
T	T	T	E	E	S	O	C	K	S

Do each exercise mentally, write your answer, and then mark it in the answer columns. For each set of exercises, there is one extra answer. Write the letter of this answer in the corresponding box at the right.

1

100% of 40   40
50% of 40   20
10% of 40   4

Answers:
- J 20
- E 80
- B 40
- P 4

2

100% of 90   90
50% of 90   35
10% of 90   9

Answers:
- C 4.5
- Y 90
- L 9
- D 45

3

100% of 500   500
50% of 500   250
10% of 500   50

Answers:
- A 500
- T 25
- T 50
- U 250

4

100% of 48   48
50% of 48   24
10% of 48   4.8

Answers:
- M 24
- R 48
- S 12
- F 4.8

5

100% of 15   15
50% of 15   7.5
10% of 15   1.5

Answers:
- Y 1.5
- C 7.5
- A 15
- O 5

6

50% of 120   60
10% of 120   12
1% of 120   1.2

Answers:
- H 60
- N 30
- V 1.2
- B 12

7

50% of 64   32
10% of 64   6.4
1% of 64   .64

Answers:
- R 6.4
- L 0.64
- C 3.2
- N 32

8

50% of 25   12.5
10% of 25   2.5
1% of 25   .25

Answers:
- A 12.5
- H 2.5
- K 1.25
- I 0.25

9

50% of 101   50.5
10% of 101   10.1
1% of 101   1.01

Answers:
- S 5.05
- D 10.1
- N 50.5
- P 1.01

10

100% of 5,280   5280
10% of 5,280   528
1% of 5,280   52.8

Answers:
- E 5.28
- R 52.8
- K 1.25
- P 1.01
- D 10.1
- S 5.05
- N 50.5
- A 12.5
- L 528
- T 5,280

TOPIC 2-e: Mental Math:
Finding a Percent of a Number

What Happened to the Guy Who Ate Ten Pounds of Powdered Food for Dinner?

Do each exercise mentally, then find your answer in the corresponding set of answers.
Write the letter of the exercise in the box containing the answer.

$50\% = \dfrac{1}{2}$	$33\dfrac{1}{3}\% = \dfrac{1}{3}$	$25\% = \dfrac{1}{4}$	$20\% = \dfrac{1}{5}$	$12\dfrac{1}{2}\% = \dfrac{1}{8}$	$10\% = \dfrac{1}{10}$

I. Use the chart above to find each percent mentally.

(H) 25% of 36   9
(T) 10% of 70   7
(G) $33\dfrac{1}{3}\%$ of 24   8
(A) 25% of 44   11

(G) 20% of 15   ~~6~~ 3
(A) 50% of 180   90
(U) 10% of 360   36
(C) $12\dfrac{1}{2}\%$ of 240   ~~36~~ 30

(T) 50% of 26   13
(H) 25% of 200   30
(T) 20% of 500   100
(H) 10% of 800   80

(O) $33\dfrac{1}{3}\%$ of 60   20
(T) $12\dfrac{1}{2}\%$ of 16   2
(E) 50% of 48   24
(T) 100% of 32   32

(G) $12\dfrac{1}{2}\%$ of 40   5
~~(X)~~ 20% of 60   16   ~~8~~
(H) $33\dfrac{1}{3}\%$ of 120   40
(N) 100% of 999   999

13	50	11	100	25	999	12	5	80	2	15	9	24	42	8	20	32	18	30	90	36	3	40	7
T	H	A	T		U	T	G	H	T	H	I	E			O	T	T	C	A	U	t	H	T

II. Use compatible numbers to estimate each percent.

(E) 19% of 30   20
(T) 12% of 72   9
(E) 9% of 40   4
(X) 34% of 36   12

(A) 48% of 64   32
(E) 24% of 280   70
(A) 32% of 150   50
(N) 18% of 75   15

(N) 26% of 80   20
(L) 21% of 200   40
(O) 14% of 640   90
(D) 11% of 720   72

(D) 33% of 90   30
(I) 51% of 72   36
(D) 27% of 400   100
(R) 99% of 18   18

(I) 9% of 600   60
(N) 13% of 88   9
(H) 53% of 900   450
(P) 102% of 250   250

36	20	45	9	450	6	75	18	50	60	15	23	32	11	100	5	70	12	250	40	80	72	4	30
T	N		T		T	A	R	A	O	N	N	A	N		D	E	X	P	L	O	D	E	D

TOPIC 2-f: Estimating a Percent of a Number

How Did Everybody Know When Sir Lancelot Was in Love with a Lady?

Estimate each percent. Under each exercise, circle the letter of the better choice. Write this letter in the box containing the number of the exercise.

> HINT: First change the percent to a simple fraction. Then change the amount to a number that is easy to divide by the denominator of the fraction.

① 26% of 27
(V) about 10
(A) about 7

② 49% of 61
(G) about 25
(D) about 30

③ 33% of 299
(P) about 100
(L) about 120

④ 18% of 42
(F) about 12
(R) about 8

⑤ 41% of 42
(O) about 16
(S) about 10

⑥ 58% of 42
(U) about 20
(I) about 24

⑦ 74% of 45
(H) about 33
(N) about 27

⑧ 67% of 88
(E) about 60
(T) about 50

⑨ 13% of 25
(L) about 5
(R) about 3

⑩ 37% of 25
(M) about 12
(T) about 9

⑪ 63% of 25
(U) about 15
(K) about 20

⑫ 86% of 25
(S) about 21
(N) about 18

⑬ 68% of 118
(B) about 72
(O) about 80

⑭ 79% of 31
(G) about 28
(H) about 24

⑮ 24% of $202
(T) about $44
(R) about $50

⑯ 36% of $75
(E) about $27
(I) about $36

⑰ 62% of $162
(O) about $90
(U) about $100

⑱ 76% of $47
(R) about $36
(L) about $30

⑲ 39% of 152
(F) about 54
(H) about 60

⑳ 52% of 495
(E) about 240
(N) about 250

㉑ 98% of 1,010
(M) about 1,000
(P) about 100

$$50\% = \frac{1}{2}$$

$$25\% = \frac{1}{4}$$

$$75\% = \frac{3}{4}$$

$$33\frac{1}{3}\% = \frac{1}{3}$$

$$66\frac{2}{3}\% = \frac{2}{3}$$

$$20\% = \frac{1}{5}$$

$$40\% = \frac{2}{5}$$

$$60\% = \frac{3}{5}$$

$$80\% = \frac{4}{5}$$

$$12\frac{1}{2}\% = \frac{1}{8}$$

$$37\frac{1}{2}\% = \frac{3}{8}$$

$$62\frac{1}{2}\% = \frac{5}{8}$$

$$87\frac{1}{2}\% = \frac{7}{8}$$

14	8		3	17	10		19	6	12		1	15	21	5	9		18	13	11	20	2		7	16	4

#	Fraction	Decimal	Per Cent	#	Fraction	Decimal	Per Cent
1)	$\frac{27}{100}$			26)			92%
2)		.63		27)		.4	
3)			71%	28)	$\frac{3}{7}$		
4)	$\frac{1}{50}$			29)			93%
5)			9%	30)		.19	
6)	$\frac{7}{8}$			31)			95%
7)		.35		32)	$\frac{4}{5}$		
8)			15%	33)		.2	
9)		.29		34)			60%
10)	$\frac{1}{5}$			35)		.12	
11)		.7		36)			3%
12)			25%	37)	$\frac{1}{6}$		
13)	$\frac{9}{10}$			38)		.37	
14)		1.09		39)	$\frac{2}{3}$		
15)			23%	40)			116%
16)	$\frac{7}{20}$			41)		.07	
17)		.14		42)			5%
18)			100%	43)	$\frac{3}{10}$		
19)		.74		44)		2.31	
20)	$\frac{1}{11}$			45)	$\frac{2}{5}$		
21)			85%	46)			50%
22)	$\frac{4}{25}$			47)	$\frac{5}{12}$		
23)			45%	48)		.1	
24)		.75		49)			4%
25)	$\frac{1}{100}$			50)	2		

Fill in the chart. Show all work neatly !!

Fraction	decimal	Percent	
$7\frac{1}{4}$ $\frac{29}{40}$	0.725	72.5%	X
$\frac{18}{25}$	0.72	72%	(2
$\frac{31}{50}$	0.62	62%	(3
$4\frac{13}{25}$	4.52	452%	(4
$\frac{11}{12}$	.81\overline{66}	91.66% or $92\frac{3}{}$%	5
$\frac{16}{25}$	0.64	64%	6
$1\frac{17}{20}$	0.185	$18\frac{1}{2}$%	6
$4\frac{8}{25}$	4.32	43.2%	X
$8\frac{2}{5}$	8.4	840%	9
$\frac{11}{3}$	$3\frac{2}{3}$ 3.6	366.6%	10
X $\frac{5}{1}$	0.5 5	500%	11
$\frac{983}{1000}$ $\frac{59}{600}$ (see notebook)	9.83	$9\frac{5}{6}$%	12
$\frac{8}{1}$	8	800%	13
$\frac{52}{52}$	1	100%	14
$\frac{73}{100}$	0.73	73%	15

$\frac{85}{100}$

$\frac{3}{8}$ $\frac{8}{\times 4}$ $\frac{}{72}$

$\frac{11}{72}$ = $\frac{M}{100}$

$12\overline{)100}$

$\begin{array}{r} 8.33 \\ 0.\overline{)500} \quad 8\% \end{array}$

$\begin{array}{r} 91\frac{2}{3} \\ 12\overline{)1100} \\ 108 \\ \hline \end{array}$
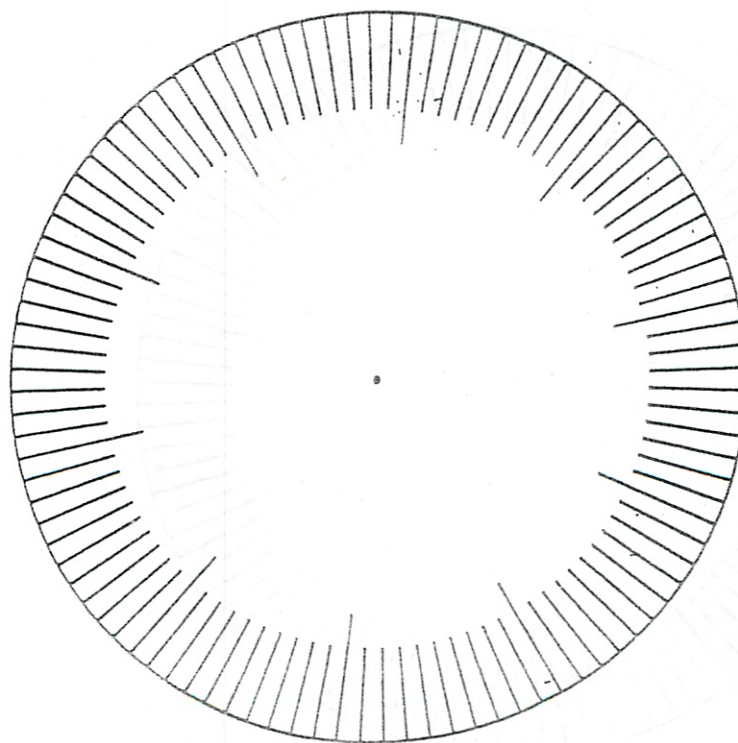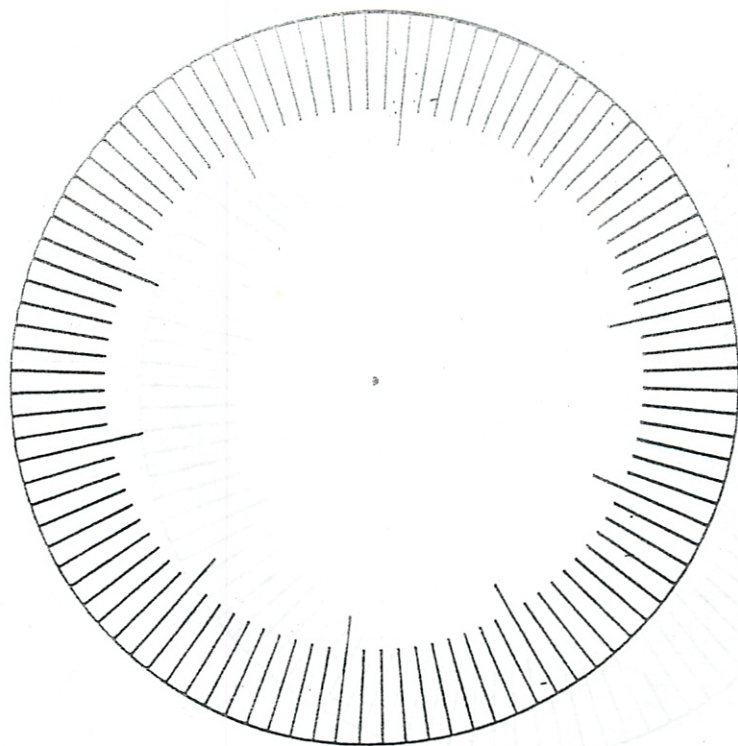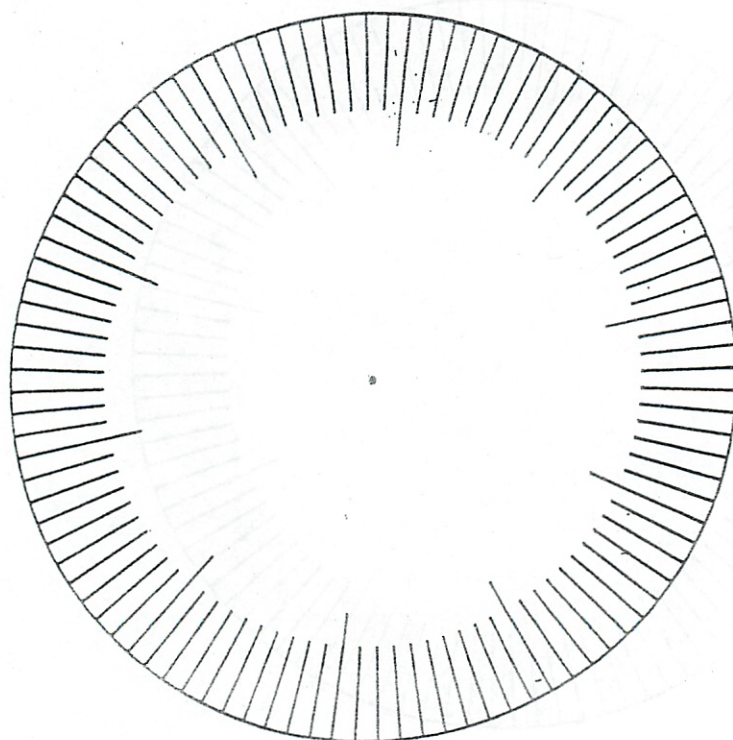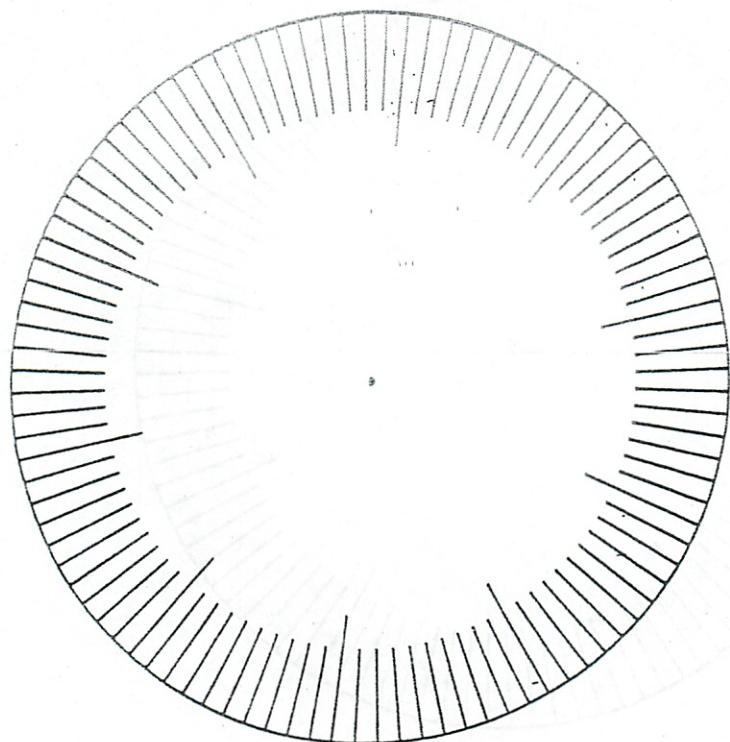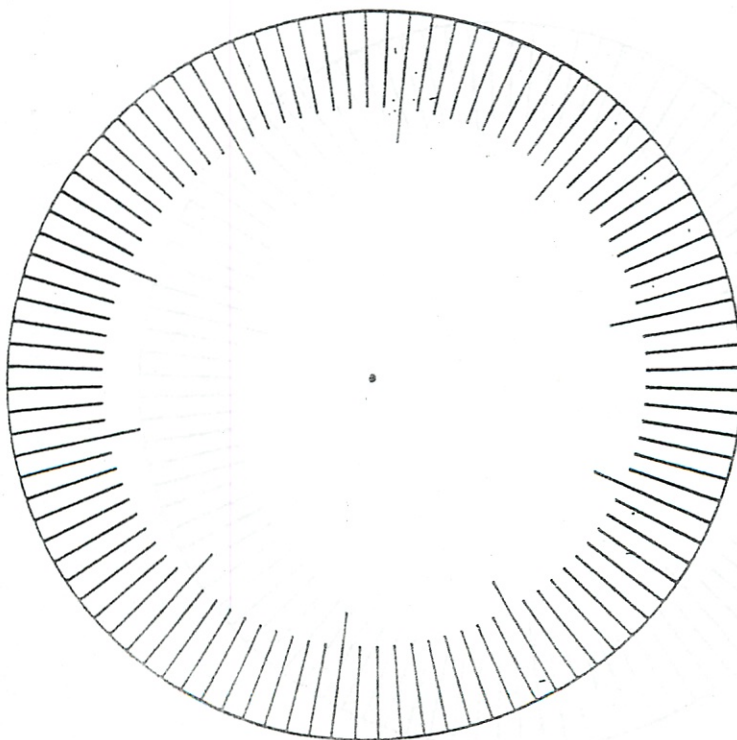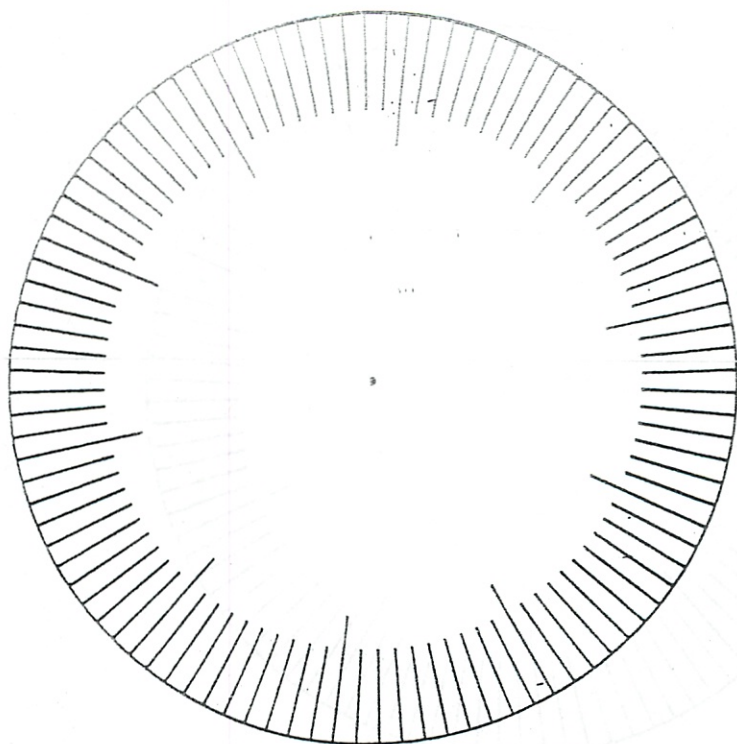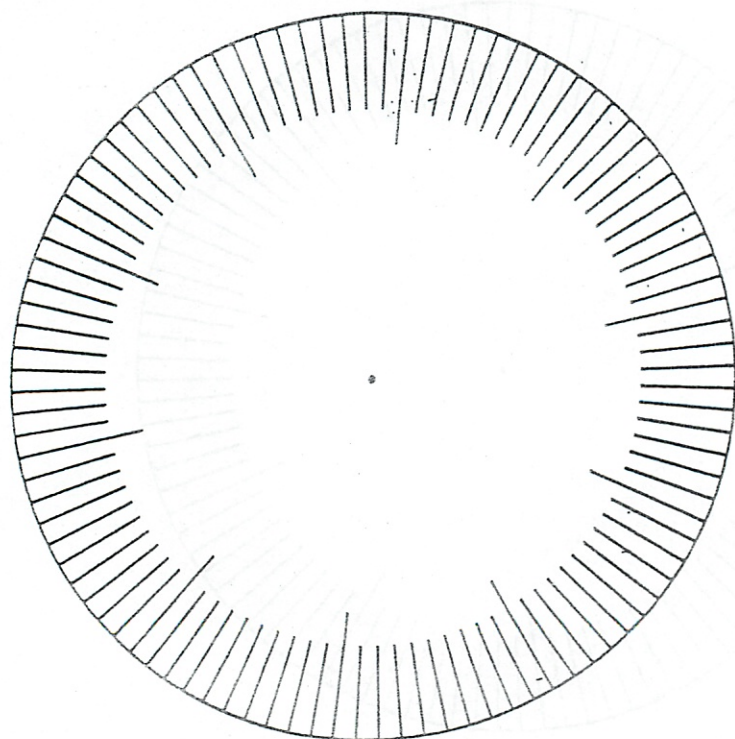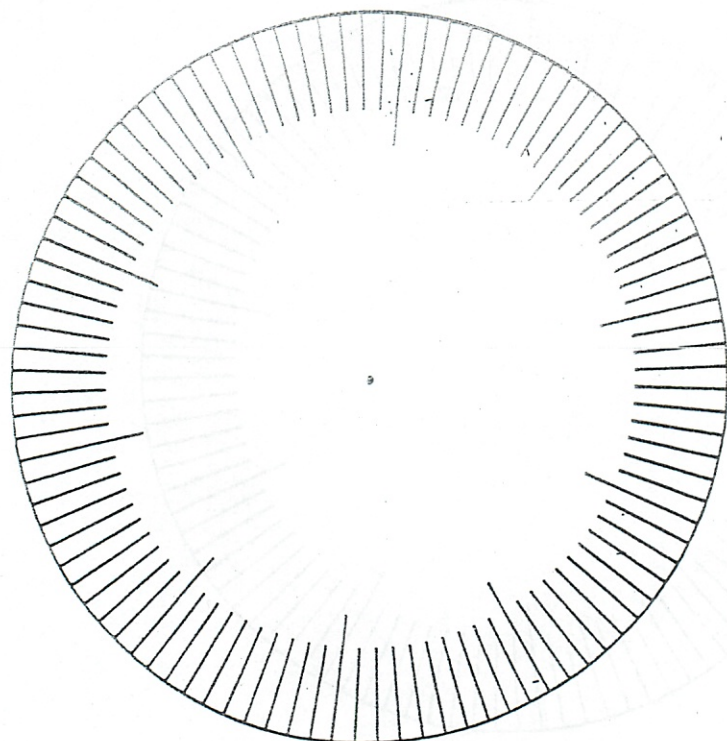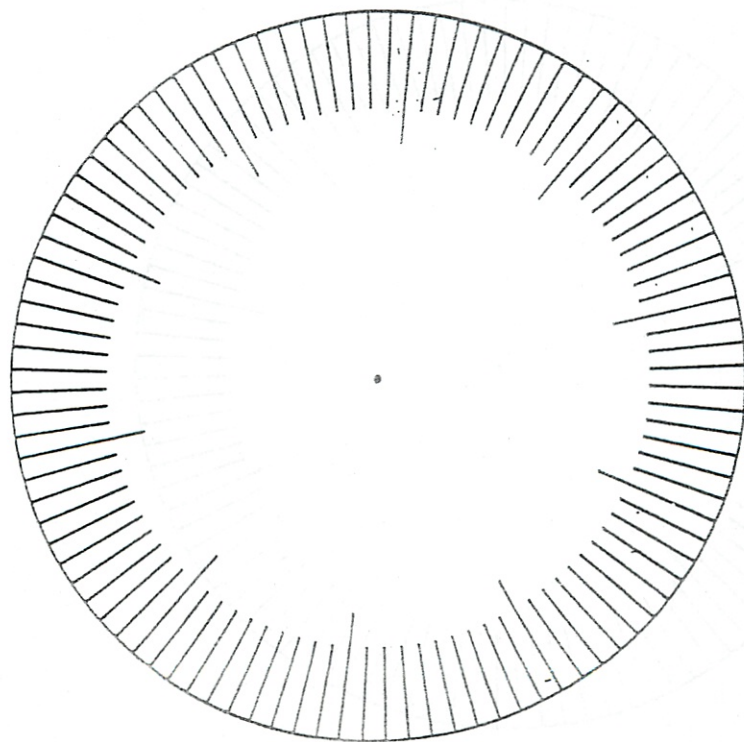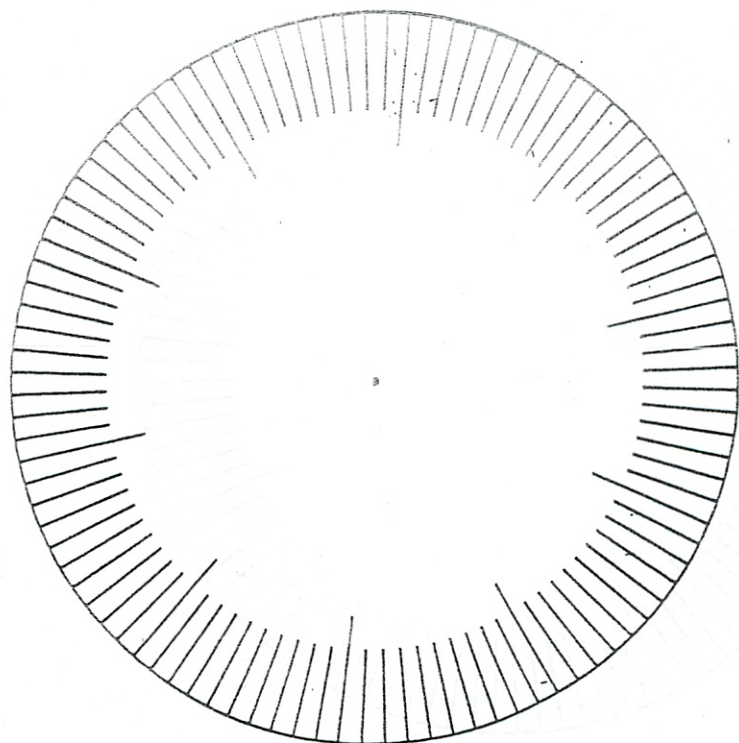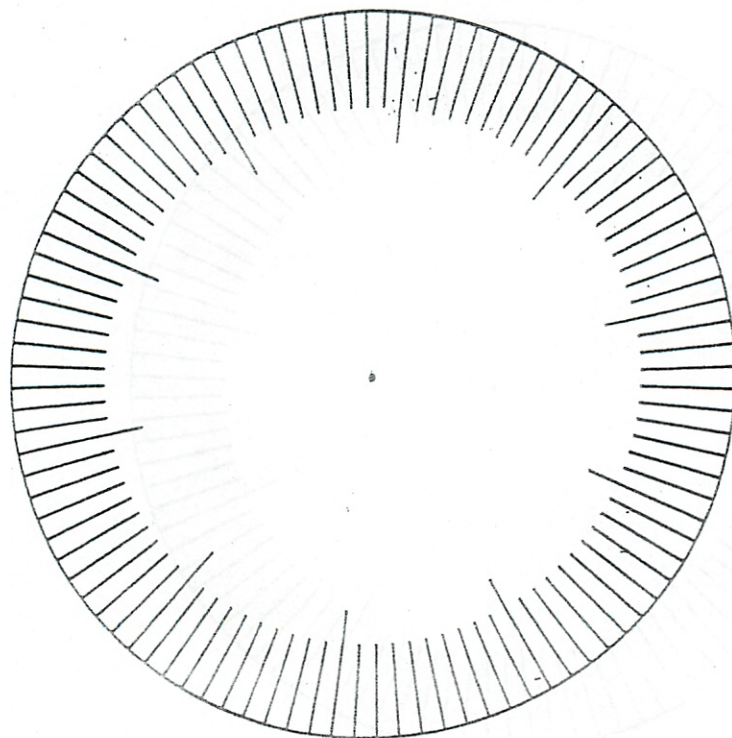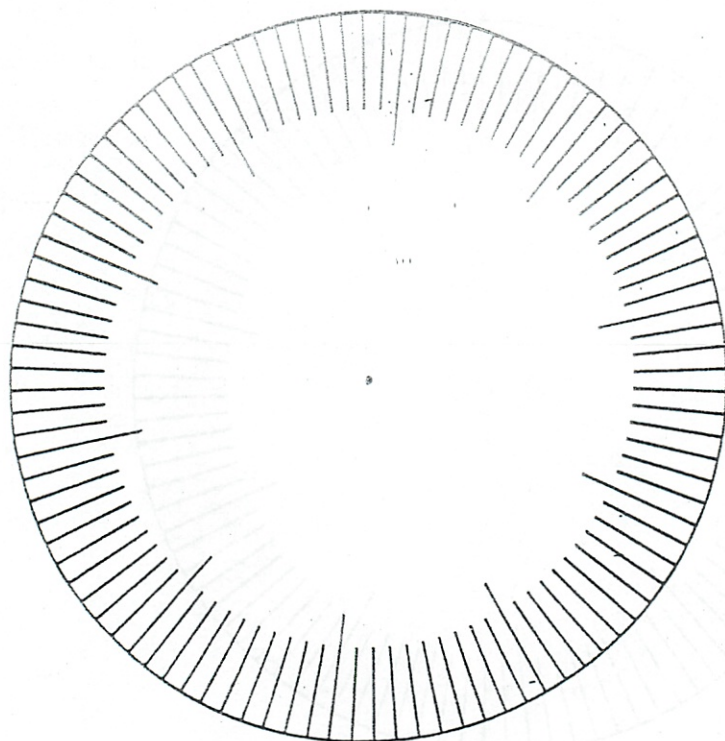
Section L. Ratios

From Ratios to Percents (Page 1 of 2)

The following methods can be used to convert a ratio into a percent:

- The Fraction Method: Rewrite the ratio as a fraction and then convert the fraction into a percent.

- The Ratio Method: Use a ratio table to calculate how many per 100.

- The Decimal Method: Use a calculator to express the ratio as a decimal by dividing and then convert the decimal into a percent.

1. Two out of five students have read *The Hobbit*. Use each of the methods described above to find a percent equivalent to two out of five.

2. Two out of three students have read *The Diary of Anne Frank*. Use each of the above three methods to determine a percent equivalent to two out of three.
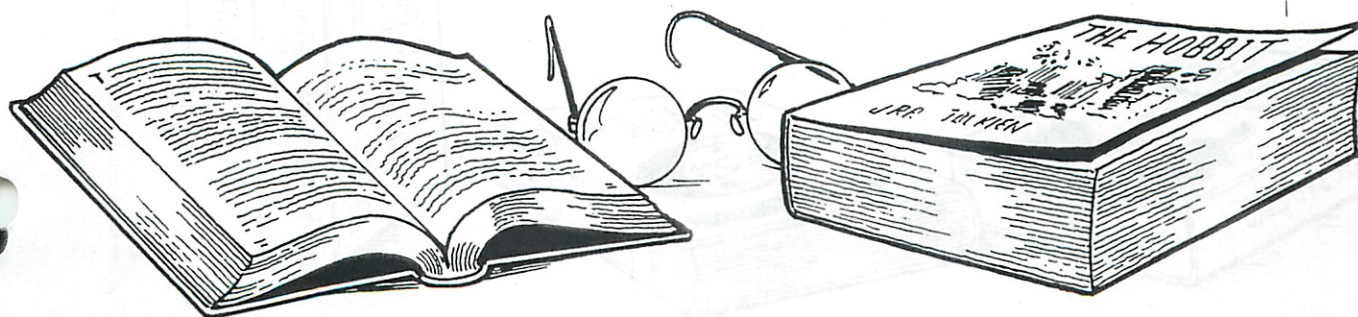
Section L. Ratios

From Ratios to Percents (Page 2 of 2)

3. Find an equivalent percent for each of the following by using one of the methods described at the top of page 82:

   a. Three out of 20 students participate in the drama club.

   b. Seven out of 10 students have a bicycle.

   c. Three out of eight students have read *The Outsiders*.

   d. Three out of four students have read *A Wrinkle in Time*.

   e. One out of three students has read *Roll of Thunder, Hear My Cry*.

   f. Eight out of 12 students have seen the movie *Jurassic Park*.

   g. Only one out of 12 students has read the book on which the movie *Jurassic Park* is based.

   h. Five out of six students have been to the zoo.

   i. The school has 250 students, but five are not in school today.

   j. Mrs. Robinson's class has 14 girls and 11 boys.
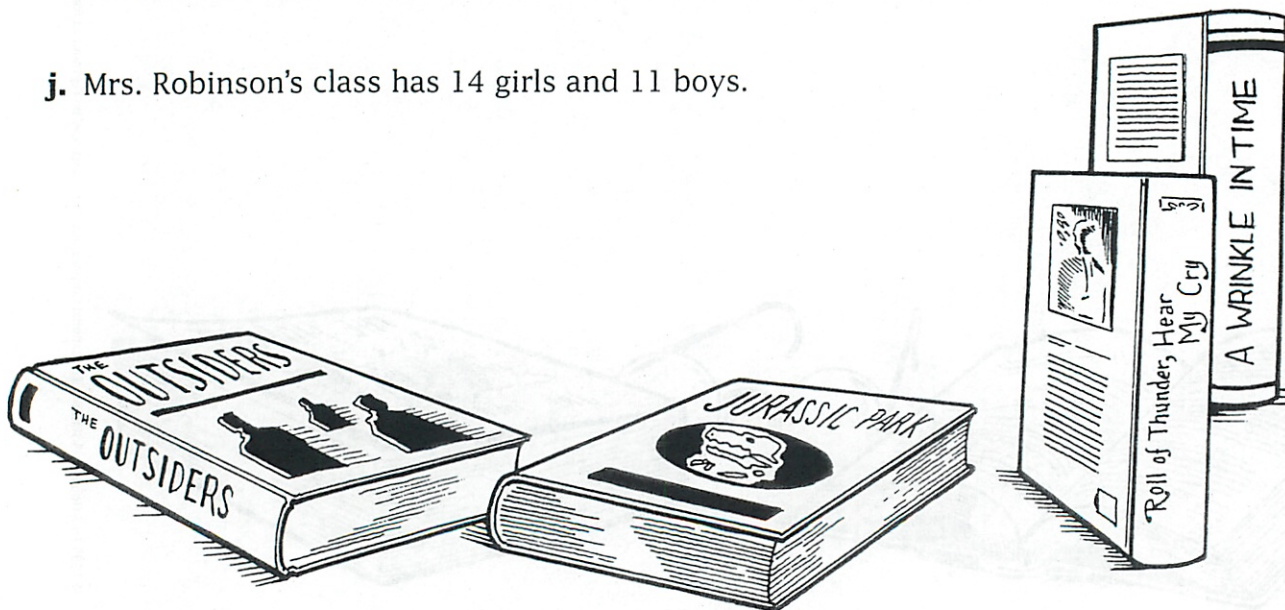
	Fraction	Decimal	Percent
1→	$\frac{13}{8}$		
2→		0.95	
3→			62%
4→		1.6	
5→	$\frac{12}{11}$		
6→			140%
7→	$\frac{27}{40}$		
8→		0.018	
9→			0.6%
10→			$15\frac{1}{3}$%
11→	$\frac{7}{12}$		
12→		26.4	
13→		0.9	
14→			600%

15→ What percent of the letters in the word PERCENTAGE are vowels?

16→ True or False?
a→ 1.6% = .16
b→ 3.2 > 32%

17→ Represent 60% in a picture.

Percent "Application"

Be sure to:
* write a word ratio
* set up a proportion
* solve the proportion
* label the answer.

1) Havertown Video rented 2000 videos in November.
500 were Action videos.
760 were Comedy videos.
460 were Drama videos.
What percent of each type of video were rented. What percent of the videos rented were "Other" types of videos?

2) Joey shot the basketball 28 times and made 16 baskets. What percent of his shots were baskets?

3) Caitie is reading *Gone With the Wind*. She has read 250 pages out of the 960 pages in the book. What percent of the pages has she read?

4) The Saturn 5 rocket is 110 m tall. A model of the Saturn 5 rocket is 4 m tall. The model height is what percent of the actual height?

5) Forty people each bought $2 lottery tickets. Three of these people won $5, two of them won $10, and one of them won $20. The total amount of money won is what percent of the total amount spent on the tickets?

6) The Fords won 7 games, lost 9 games and tied 2 games.
What percent of the games did they win?
What percent of the games did they not lose?

Discount & Markup

Find the amount of discount or markup

1)   Original Price: $120
     rate (%) of discount: 30%

2)   Store Owner's Price: $150
     rate (%) of markup: 250%

Find the amount of discount & sale price

3)   Original Price: $150
     rate (%) of discount: 18%

4)   Original Price: $315
     rate of discount: 40%

Find the rate (%) of discount or markup

5)   Amount of discount: $12.50
     Original Price: $90

6)   Store Owner"s Price: $60
     Amount of Markup: $78

Find the amount of markup & selling price

7)   Store Owner's Price: $65
     rate (%) of markup: 220%

8)   Store Owner's Price: $145
     rate of markup: 300%

Find the original price.

9)   Amount of discount: $52.80
     rate (%) of discount: 32%

Sales Tax

Find the amount of sales tax

1) Price of Item: $150
   rate (%) of tax: 8%

2) Price of Item: $14.50
   rate (%) of tax: 5.5%

Find the amount of tax & final cost

3) Price of Item: $1.25
   rate (%) of tax: 9%

4) Price of Item: $15
   rate (%) of tax: 6.5%

Find the rate (%) of tax

5) Amount of tax: $8.05
   Price of Item: $115

6) Price of Item: $60
   Amount of tax: $3.75

Find the amount of discount, sale price, amount of tax & final cost

7) Original Price: $112
   rate (%) of discount: 15%
   rate (%) of tax: 7%

8) Original Price: $240
   rate (%) of discount: 20%
   rate (%) of tax: 5.5%

Review 1 -- Buyer Beware

1) A sports club needs to order the following merchandise. Fortunately, they will receive a 18% discount. Estimate the savings for each item.
   a) basketball $23
   b) tennis racket $49.55
   c) volleyball net $109
   d) catcher's mask $15.70

2) Estimate each of the following amounts.
   a) 48% of $400
   b) 32% of .$148
   c) 8% of $240
   d) 23% of $200

3) Construct a circle graph and display the following data:
   Favorite color of Ms Somers' math classes: red, 12 students; blue, 10 students; purple, 18 students; green, 6 students; yellow, 14 students.

4) Find the amount of discount and sale price for each item.
   a) original price $160 ; 32% discount
   b) original price $225 ; 15% discount

5) Find the amount of tax and final cost for each item.
   a) price of item $45 ; 7% tax
   b) pricel of item $120 ; 6.5% tax

6) Find the amount of markup and selling price for each item.
   a) store owner's price $36 ; 250% markup
   b) store owner's price $110 ; 300% markup

7) Find the amount of discount, sale price, amount of tax & final cost:
   original price $220 ; 20% discount ; 8% tax

8) Find the amount of markup, selling price, amount of tax & final cost:
   store owner's price $60 ; 270% markup ; 7.5% tax

9) What's the better buy?
   a)   books, $29.99 at 10% off   OR   books, $32.95 at 15% off
   b)   VCR, $120 at 30% off   OR   VCR, $240 at 60%off
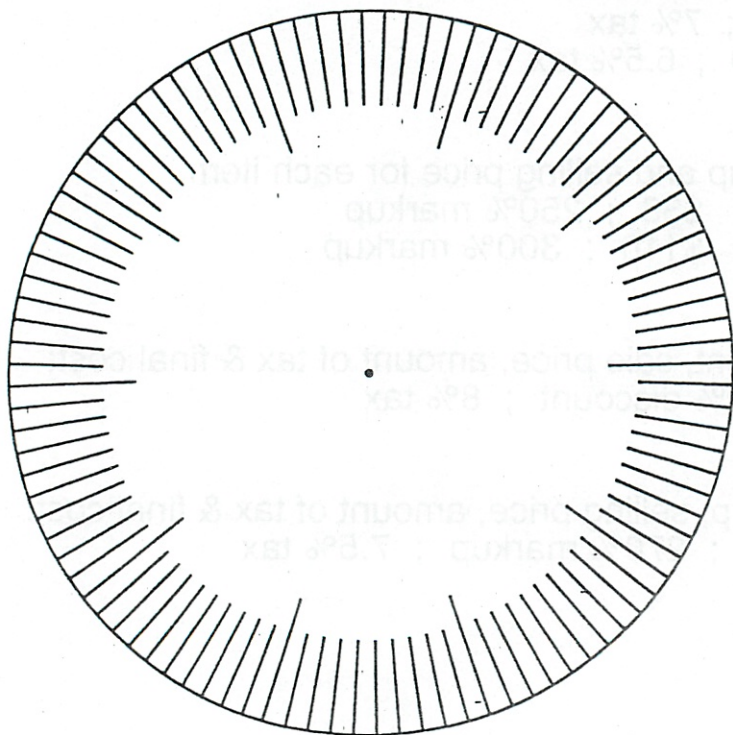
Review 2 -- Buyer Beware

1) A sports club needs to order the following merchandise. Fortunately, they will receive a 27% discount. Estimate the savings for each item.
   a) basketball $23
   b) tennis racket $49.55
   c) volleyball net $109
   d) catcher's mask $15.70

2) Estimate each of the following amounts.
   a) 42% of $400
   b) 18% of $148
   c) 8% of $300
   d) 13% of $240

3) Construct a circle graph and display the following data:
   Favorite color of Mrs Evart's math classes: red, 8 students; blue, 10 students; purple, 5 students; green, 15 students; yellow, 12 students.

4) Find the amount of discount and sale price for each item.
   a) original price $140 ; 30% discount
   b) original price $215 ; 18% discount

5) Find the amount of tax and final cost for each item.
   a) price of item $44 ; 8% tax
   b) price of item $120 ; 7.5% tax

6) Find the amount of markup and selling price for each item.
   a) store owner's price $34 ; 280% markup
   b) store owner's price $170 ; 200% markup

7) Find the amount of discount, sale price, amount of tax & final cost:
   original price $250 ; 30% discount ; 9% tax

8) Find the amount of markup, selling price, amount of tax & final cost:
   store owner's price $80 ; 320% markup ; 6.5% tax

9) What's the better buy?
   a)   books, $35 at 12% off   OR   books, $40 at 18% off
   b)   VCR, $120 at 20% off   OR   VCR, $240 at 60%off
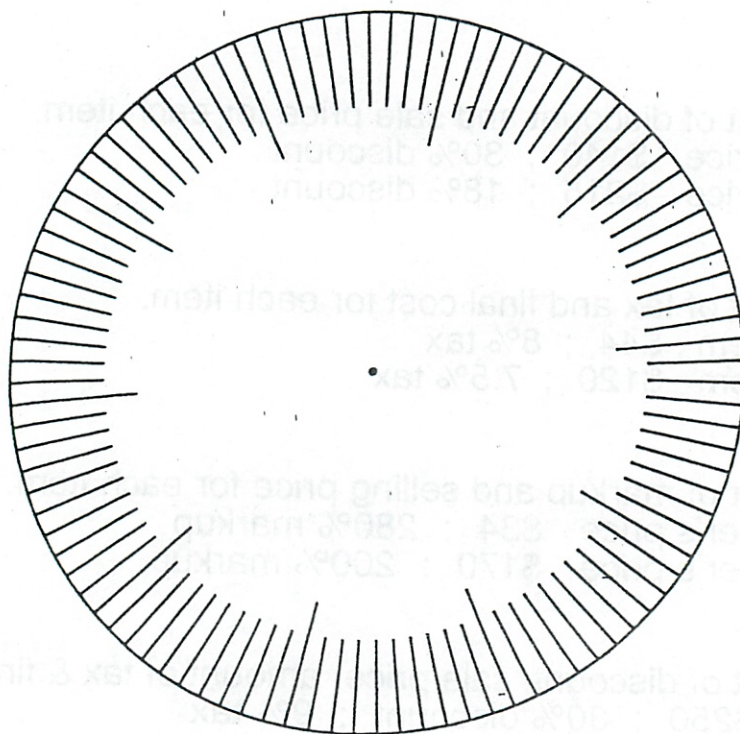
Review 3 -- Buyer Beware

1) A sports club needs to order the following merchandise. Fortunately, they will receive a 32% discount. **Estimate** the savings for each item.

   a) warm-up suit
      regular price: $46.99

   b) tennis racket
      regular price: $59.45

2) Estimate each of the following amounts.

   a) 48% of $200

   b) 28% of $272

3) Construct a **circle graph** to display the following data:

   Favorite sports of Mrs. Evarts' classes:

   Football, 21 students;   Basketball, 28 students;
   Bowling, 10 students;   Skiing, 25 students;   Hockey, 36 students

4) Find the amount of **discount**, sale price, amount of **tax** & final cost.
   original price: $320
   % discount: 22%
   % tax: 5%

5) Find the amount of **markup**, selling price, amount of **tax** & final cost.
   store owner's price: $50
   % markup: 240%
   % tax: 6.5%

Fraction	Decimal	%
$\frac{11}{12}$	(X) $0.91\overline{6}$	$91\frac{2}{3}\%$
$1\frac{18}{26}$ say $\frac{43}{25}$	1.72	172%
$\frac{042}{1000}$ $\frac{21}{500}$ (I)	0.042	4.2%
$\frac{3}{40}$ $\frac{25}{1000}$ $\frac{11}{200}$	0.075	7.5%
$\frac{11}{16}$	$.6875$	$68\frac{1}{4}\%$
$1\frac{3}{8}$ (X) $\frac{55}{40}$ $\frac{275}{200}$ $\frac{1375}{1000}$ $\frac{11}{80}$	$.1375$	$13\frac{3}{4}\%$

$\frac{11}{16} = \frac{m}{100}$

$16\overline{)1100}$

Expressing unit rate

NAME *Michael Plasmeier*

WHY DOESN'T SWEDEN EXPORT CATTLE?
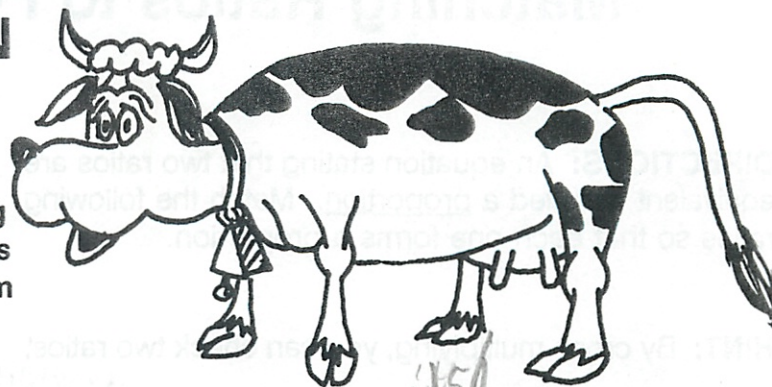
DIRECTIONS: Solve each problem by writing the unit rate. Each time your answer appears in the decoder, write the letter of the problem above it. All rates are expressed in lowest terms.

1. Ken purchased 100 pencils for $4.00. _____ $= N$ 4/1

2. The Atlanta Braves paid $200.00 to have 3,000 posters printed. 300¢/20¢ $= H$

3. Catherine sold 288 magazine subscriptions in 18 days. 16/1 _____ $= E$

4. The Grogans drove a total of 1,512 miles in 6 days. 252/1 _____ $= L$

5. A typist types 1,950 words in 30 minutes. 39/1 _____ $= O$

6. The Kodak shop processed 228 rolls of film in 4 days. 57/1 _____ $= R$

7. Furniture Crafters charges $268.15 to assemble 31 chairs. _____ W

8. Cedric bought 12 pens for $1.44. 12/1 _____ $= P$

9. Bonnie's parents paid $500 for 25 lessons in horseback riding. $=$ 20/1 _____ A

10. Apples were on sale at 4 pounds for $1.20. 30/1 _____ $= S$

11. Six Flags' season tickets were on sale at 6 for $264.00 1/44 _____ $= K$

12. The Godfreys paid $2,184 to rent a chalet for 6 months. 364/1 _____ C

13. Ryan sold 216 chocolate bars in 6 days for his soccer team. 36/1 _____ $= M$

14. Jean read 60 pages in 15 minutes. 4/5 _____ $= T$

H	E			N	H	S
1/.30	.15/1	16/1	8.65/1	$20/1	.04/1	4/1	.30/1

H		K	E	E	P			R
4/1	65/1	1/$44	16/1	16/1	.12/1	.15/1	16/1	57/1

S			C				L	M
.30/1	4/1	65/1	$364/1	1/$44	.15/1	65/1	252/1	36/1

Application and analysis   NAME_____

Matching Ratios to Form Proportions

DIRECTIONS: An equation stating that two ratios are equivalent is called a <u>proportion</u>. Match the following ratios so that each one forms a proportion.

HINT: By cross multiplying, you can check two ratios.

$\frac{6}{4} \times \frac{21}{14}$ $6 \times 14 = 84$ These ratios <u>do</u>
                  $4 \times 21 = 84$ form a proportion.
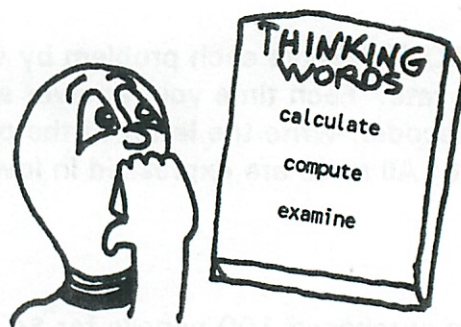
THINKING WORDS
calculate
compute
examine

MATCHING:

H	1. $\frac{3}{7}$	A.	$\frac{42}{24}$
C	2. $\frac{2}{5}$	B.	$\frac{8}{12}$
J	3. $\frac{7}{21}$	C.	$\frac{14}{35}$
E	4. $\frac{4}{7}$	D.	$\frac{8}{2}$
G	5. $\frac{6}{12}$	E.	$\frac{24}{42}$
B	6. $\frac{2}{3}$	F.	$\frac{16}{2}$
A	7. $\frac{7}{4}$	G.	$\frac{7}{14}$
F	8. $\frac{24}{3}$	H.	$\frac{21}{49}$
D	9. $\frac{12}{3}$	I.	$\frac{12}{15}$
I	10. $\frac{4}{5}$	J.	$\frac{1}{3}$

Percent and Proportion

What number is 15% of 60?

$$\frac{\text{"is"}}{\text{"of"}} = \frac{\%}{100}$$

$$\frac{n}{60} = \frac{15}{100}$$

$$100\,n = 900$$

$$n = 9$$

9 is 15% of 60.

Practice • Solve the proportions.

1. $\frac{n}{18} = \frac{20}{36}$ _40_   2. $\frac{n}{30} = \frac{21}{90}$ _7_   3. $\frac{n}{13} = \frac{27}{39}$ _9_   4. $\frac{n}{14} = \frac{12}{56}$ _3_

5. $\frac{n}{20} = \frac{2}{5}$ _8_   6. $\frac{n}{12} = \frac{12}{18}$ _8_   7. $\frac{n}{40} = \frac{90}{100}$ _36_   8. $\frac{n}{15} = \frac{42}{90}$ _8_

Solve by using proportion.

What number is 40% of 25?   _10_

What percent of 40 is 50?   _125%_

What number is 60% of 50?   _120_

24 is 40% of what number?   _60_

What percent of 36 is 9?   _25%_

What percent of 40 is 10?   _25%_

What number is 25% of 72?   _18_

42 is 20% of what number?   _210_

What number is 30% of 60?   _18_

What is 5% of 80?   _4_

What number is 48% of 25?   _12_

What number is 115% of 20?   _23_

27 is 15% of what number?   _180_

What percent of 10 is 40?   _400_

What percent of 50 is 45?   _90%_

10% of what number is 80?   _800_

Use with text pages 204–205.

Practice
Student Book pp. 304–305

Solve. Write your answers in the cross-number puzzle. Do not write percent symbols in the puzzle.
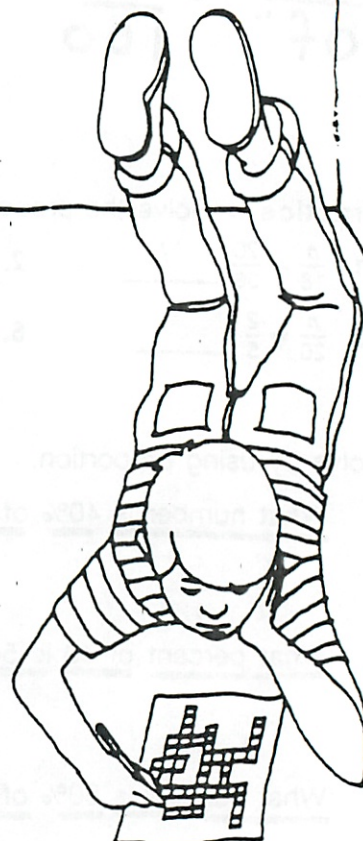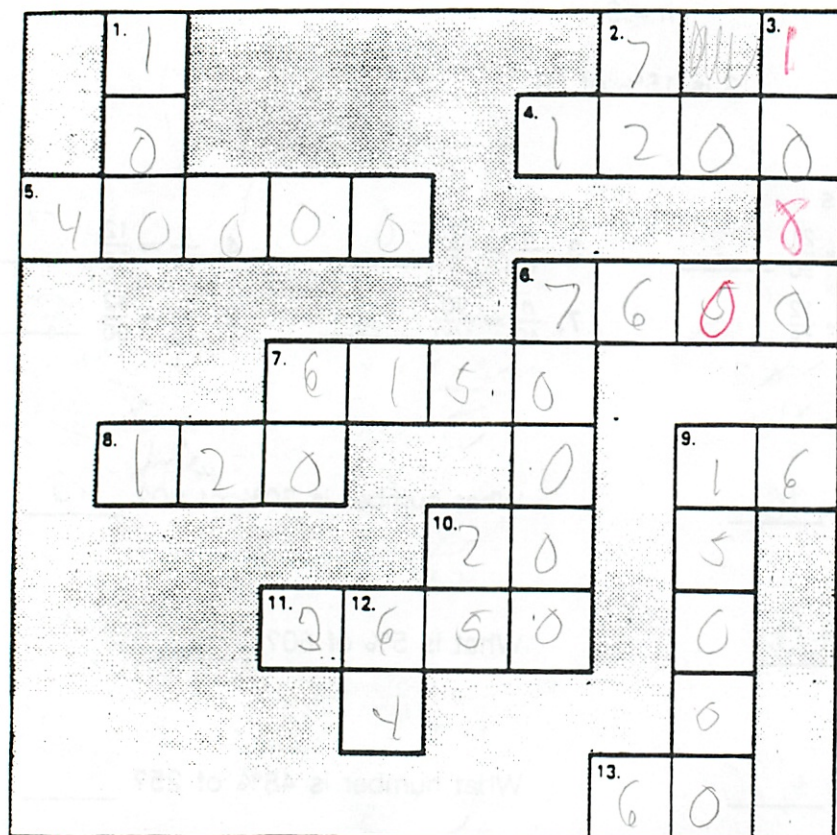
Across

4. 60 is 5% of what number?

5. 800 is 2% of what number?

6. What is 95% of 8000?

7. What is 82% of 7500?

8. 18 is 15% of what number?

9. 12 is what percent of 75?

10. 63 is what percent of 315?

11. 365 is 10% of what number?

13. 27 is what percent of 45?

Down

1. 425 is what percent of 425?

2. 36 is what percent of 50?

3. 594 is 55% of what number?

6. 7000 is 10% of what number?

7. What percent of 325 is 195?

9. 4% of what number is 600?

10. What percent of 96 is 24?

12. What percent of 25 is 16?

Michael Plasmeier

$$\frac{Amt \boxed{}}{\boxed{} Price} = \frac{\% \boxed{}}{100}$$

Disc
Mack
Tax

↓
B
O
S
F

Sale Price = O Price = Amt Disc
O Price = B Price + Amt Mark
F Price = S Price + Amt. Tax

Michael Plasmeier

Find the amount of discount

1→ original price ⟹ $120
rate (%) ⟶ 30%
of discount

$$\frac{x}{120} \quad \frac{30}{100} \qquad \frac{120 \times 30}{100} \frac{3}{1}$$

$$\boxed{x = \$36}$$

2→ rate (%) ⟶ 40%
of discount
original price ⟹ $315

$$\frac{x}{315} \quad \frac{40}{100} \qquad \frac{315 \times 40}{100} \frac{63}{51}$$

$$\boxed{x = \$126}$$

3→ original price ⟹ $899
rate (%) ⟶ 18% round
of discount

$$\frac{x}{899} \quad \frac{18}{100} \qquad \frac{899 \times 18}{100}\frac{}{1}$$

$$\boxed{x = \$162 - about}$$

$161.82

Can we round?
Not suppose to

$$\frac{Amt\ Disc}{Org\ Price} = \frac{\%}{100} \qquad I \ ) Write each time$$

※ Find the rate (% of discount

4→ amount of discount ⟹ $12.50
original price ⟹ $90

$$\frac{12.50}{90} \quad \frac{x}{100} \qquad \frac{12.50 \times 100}{90}\frac{10}{9}$$

$$\frac{125}{9}$$

$$\boxed{x = 13.8\%} → 14\%$$

Look ↗

5→ original price ⟹ $650
amount of discount ⟹ $97.50

$$\frac{97.50}{650} \quad \frac{x}{100} \qquad 15$$

$$\boxed{x = 15\%}$$

$$6.5\overline{)97.50}$$
$$\underline{-65}$$
$$325$$
$$\underline{-325}$$
$$0$$

{ Reminder :
$$\frac{am't\ disc}{orig\ pr} = \frac{\%\ disc}{100}$$ }

※ to the nearest whole %

Find the amount of discount and the sale price. (x)(x)

1→ orig. pr. → $150

% disc → 18%

$$\frac{x}{150} = \frac{18}{100}$$

$$\begin{array}{r} 48 \\ \times 1.5 \\ \hline 90 \\ 180 \\ \hline 27.0 \end{array}$$

$x = 27

$$\begin{array}{r} 150 \\ -27 \\ \hline 123 \end{array}$$

x = $123

2→ % disc → 26%

orig. pr. → $260

$$\frac{x}{260} = \frac{26}{100}$$

$$\begin{array}{r} 26 \\ \times 2.6 \\ \hline 156 \\ 520 \\ \hline 67.16 \end{array}$$

x = 67.60

260

$$\begin{array}{r} 260.0 \\ -67.6 \\ \hline 192.4 \end{array}$$

x = $192.40

3→ orig. pr. → $795

% disc. → 12%

$$\frac{x}{795} = \frac{12}{100}$$

$$\frac{795 \times 12}{100}$$

x = 95.40

write amount, etc...

$$\begin{array}{r} 7950 \\ 95.4 \\ \hline 699.6 \end{array}$$

x = $699.60

Find the rate of discount

4→ am't disc → $98

orig. pr. → $350

$$\frac{98}{350} = \frac{x}{100}$$

$$\begin{array}{r} 28 \\ 35\overline{)980} \\ -70 \\ \hline 280 \\ 280 \end{array}$$

x = 18%

28%

5→ orig. pr. → $150

sale pr. → $129

$$\begin{array}{r} 150 \\ -129 \\ \hline 21 \end{array}$$

$$\frac{21}{150} = \frac{x}{100}$$

$$\begin{array}{r} 14 \\ 15\overline{)210} \\ 15 \\ \hline 60 \\ 60 \end{array}$$

x = 14%

Find the original price

6→ am't disc → $52.80

% disc → 32%

$$\frac{52.80}{x} = \frac{32}{100}$$

$$\frac{52.80 \times 100}{32}$$

x = $165

Find the sales tax.

1→ % tax → 8%
    price of item → $150

$$\frac{x}{150} \qquad \frac{87}{100} \qquad \frac{150 \times 87}{100}$$

$$x = \$130.50$$

2→ price of item → $216
    % tax → 7½%

$$\frac{x}{216} \qquad \frac{7.5}{100} \qquad \frac{216 \times 7.5}{100}$$

$$x = 16.13$$

3→ % tax → 6%
    price of item → $14.50

$$\frac{x}{14.50} \qquad \frac{6}{100} \qquad \frac{14.50 \times 6}{100}$$

$$x = 87¢$$

Find the final cost.

4→ % tax → 9%
    price of item → $1.25

$$\frac{x}{1.25} \qquad \frac{9}{100} \qquad \frac{1.25 \times 9}{100}$$

1.25 Price
+ .11 Tax
1.36 Final Price

5→ % tax → 6.5%
    price of item → $15

$$\frac{x}{15} \qquad \frac{6.5}{100} \qquad \frac{15 \times 6.5}{100}$$

.98 Fixable This

$$x = 15.98$$

.975 correct

6→ price of item → $120
    % tax → 7%

$$\frac{x}{120} \qquad \frac{7}{100} \qquad \frac{120 \times 7}{100}$$

120.00
+ 8.40
$$x = 128.40$$

You can't change

8.40 fixable

Reminder: $\dfrac{\text{am't tax}}{\text{price}} = \dfrac{\% \text{ tax}}{100}$

final cost = price + am't tax

Discount and Tax

Find the amount of (x) discount, sale price (y) tax, and final price.

(a)　(b)

1→　% disc ⇒ 16%
　　orig. pr ⇒ $49.75
　　% tax ⇒ 6%

(x)
$$\frac{Amt\ Disc}{Price} = \frac{\%\ Disc}{100}\qquad \frac{x}{49.75} = \frac{16}{100}$$

49.75×16
$\frac{}{100}$ 25

(x)
49.75 Org Price
7.96 Amt Disc
y = $41.79 Sale Price

(b) 41.79 Sale Price
　2.51 Amt Tax
b = $44.30 Final Price

49.75 × 4 = 199.00 / 25

(c)
$$\frac{Amt\ Tax}{Sale\ Price} = \frac{\%\ tax}{100}\qquad \frac{x}{41.79} = \frac{6}{100}$$

a = 2.51

$x = $7.96

41.79 × 3 = 125.37 / 25

41.79
× 3
125.37

2→　orig. pr ⇒ $115
　　% disc ⇒ 33%
　　% tax ⇒ 6.5%

$$\frac{Amt\ Disc}{Price} = \frac{\%\ Disc}{100}\qquad \frac{x}{115} = \frac{33}{100}\qquad \frac{115 \times 33}{100}$$

115.00 Price　　77.05 Price
37.95 Amt Disc　5 Tax
y = 77.05 Sale Price　82.05 Final Price

x = $37.95

$$\frac{Amt\ Tax}{Price} = \frac{\%\ tax}{100}\qquad \frac{x}{77.05} = \frac{6.5}{100}\qquad \frac{77.05 \times 6.5}{100}$$

a = $5

115
× 33
345
3450

77.05
× 6.5
38525
46230
500.825 / 100

3→ Find the orig. pr. (x)
　% disc ⇒ 12%
　am't disc ⇒ $18.96

$$\frac{Amt\ Disc}{Price} = \frac{\%\ Disc}{100}\qquad \frac{18.96}{x} = \frac{12}{100}\quad \frac{18.96 \times 100}{12}$$

6.32
25
18.96 × 100 / 12.81

6.32
25
3160
126.40
158.00

x = $158

4→ Find the % tax (x)
　orig. pr. ⇒ $150
　final pr. ⇒ $160.50

160.5
−150
10.5

$$\frac{Amt\ Tax}{O.\ Price} = \frac{\%\ tax}{100}\qquad \frac{10.50}{150} = \frac{x}{100}$$

$$\frac{10.50 \times 100}{150}$$

x = 7%

$7.0\frac{21}{3}$

3.33 / 3)100.0

5→ Find the orig. pr.
　% tax ⇒ 5½%
　am't tax ⇒ $7.70

$$\frac{Amt\ Tax}{Org\ Price} = \frac{\%\ tax}{100}\qquad \frac{7.70}{x} = \frac{5.5\%}{100}\quad \frac{7.70 \times 100}{5.5}$$

1400
51

x = $140

Discount and Tax
Markup

2/6 Study

1) Find the am't disc 31.50 **and sale price** 143.50

%disc ⇒ 18%
orig pr ⇒ $175

Amt Disc / O Price   %Disc / 100   x / 175   18 / 100

175.00
31.50
143.50   Amt Disc **31.50**
E Price

7
85   9
175 × 18
100
63 2
2
31.50

4) Find the orig. pr.

%disc ⇒ 22%
am't disc ⇒ $135.30

Amt Disc / O Price   %Disc / 100   135.30   22 / 100

$615
O Price

6.15
22)135.30
-110
33
110

135.30 × 10
22
13530
22

2) Find the am't tax and final cost

orig pr ⇒ $79
%tax ⇒ 8½ %

Amt Tax / O Price   %tax / 100   x / 79   8.5 / 100

79.00
6.31
Final Cost   tax 5.31   6.72

85.72

79 × 8.5
100
7
79
× 8.5
395
49-20
5 3.60

5) Find the: am't disc, Sale pr, am't tax, final cost

orig pr ⇒ $80
%disc ⇒ 12%
%tax ⇒ 6%

Amt Disc / O Price   %Disc / 100   x / 80   12 / 100   80 × 12 / 100   43/5

Amt Tax / S Price   %tax / 100   x / 71.60   6 / 100   71.60 × 8 / 100   8 3/5

71.60 S price
4.29 Amt tax
74.62 F Price

7.60
6
42.9.60 $8.60 Amt Disc
80.00 O price
8.40 Amt Disc
70.80 S price
4.22 Tax

3) Find the %disc.

orig. pr. ⇒ $250
sale pr. ⇒ $207.50

Amt Disc / O Price   %Disc / 100   42.50 / 250   x / 100

(17%)   59.5%

250.00
207.50
42.50

7
18
42.50 × 100
250
5

42.50
× 7
297.50

59.5
5)297.5

6) Find the: am't mark↑, selling price, am't tax, final cost

store owners $120 price
%mark↑ 140%
%tax 8%

Amt Mark / SO Price   %Mark / 100   x / 120   140 / 100

Amt tax / O Price   %tax / 100   x / 182.60   8 / 100

152.60
×.20

162.60
Markup

182.60 × 8

314.84
F cost

13.04

120
32.60 O Price
$288 to O Price
288

Discount and Tax

① Find the am't disc and sale price

% disc ⟹ 18%
orig pr ⟹ $175

④ Find the orig. pr.

% disc ⟹ 22%
am't disc ⟹ $135.30

② Find the am't tax and final cost

orig pr ⟹ $79
% tax ⟹ 8½%

⑤ Find the: am't disc
sale pr.
am't tax
final cost

orig pr ⟹ $80
% disc ⟹ 12%
% tax ⟹ 6%

③ Find the % disc.

orig. pr. ⟹ $250
sale pr. ⟹ $207.50

$\frac{60}{60}$ ✗

Test -- Discount, Tax Markup

Name: _Michael Plasme'er_

---

1) Find the amount of tax

% tax: 8%
Original Price: $110

$\frac{Amt\ tax}{O\ Price}$ $\frac{\%\ tax}{100}$ $\frac{x}{110} = \frac{8}{100}$ $\frac{110 \times 8}{100} = 6$

44
52

$8\frac{4}{5}$

8.80

$8.80\ Tax$ ✓

Amount of tax: $8.80

---

2) Find the % discount

Original Price: $200
Sale Price: $140

200 OPrice
-140 Sale Price
  60 Amt Disc

$\frac{Amt\ Disc}{O\ Price}$ $\frac{\%\ Disc}{100}$ $\frac{60}{200} = \frac{x}{100}$ ÷2

30
↓
30%
Disc

% Discount: 30%

---

3) Find the amount of discount

Original Price: $75
% discount: 15%

$\frac{Amt\ Disc}{O\ Price}$ $\frac{\%\ Disc}{100}$ $\frac{x}{75} = \frac{15}{100}$ $\frac{75 \times 15}{100} = \frac{3}{4}$

$\frac{45}{4}$

$11\frac{1}{4}$

11.25
Amt Disc

Amount of discount: $11.25

---

4) Find the Original Price

% Discount: 24%
Amount of discount: $57.60

$\frac{Amt\ Disc}{O\ Price}$ $\frac{\%\ Disc}{100}$ $\frac{57.60}{x} = \frac{24}{100}$ $\frac{57.60 \times 100}{24}$

$240
O Price

Original Price: $240

5) Original Price: $180
% discount: 35%
% tax: 8%

$\dfrac{Amt\ Disc}{O\ Price}$ $\dfrac{\%\ Disc}{100}$ $\times$ $\dfrac{35}{100}$ $\dfrac{180 \times 35}{100}$

180 OPrice
−63 Amt. Disc
⟨$117 S Price⟩

117 S price
+9.36 Amt Tax
⟨$126.36 F Price⟩

$\dfrac{63}{1}$
↓
⟨$63 Amt Disc⟩

$\dfrac{Amt\ Tax}{S\ Price}$ $\dfrac{\%\ tax}{100}$ $\times$ $\dfrac{8}{100}$ $\dfrac{117 \times 8}{100}$

$9\frac{9}{25}$
⟨$9.36 Amt Tax⟩

Find the:
Amount of discount: $63
Sale Price: $117
Amount of tax: $9.36
Final Cost: $126.36

6) Store Owner's Price: $175
% Markup: 240%
% tax: 6%

$\dfrac{Amt\ Mark}{B\ Price} = \dfrac{\%\ Mark}{100}$ $\times$ $\dfrac{240}{100}$ $\dfrac{175 \times 240}{100}$

175 BPrice
+420 Amt Mark
⟨$595 O Price⟩

595 O Price
+35.70 Amt Tax
⟨$630.70 FCost⟩

⟨$420 Amt Mark⟩

$\dfrac{Amt\ Tax}{O\ Price}$ $\dfrac{\%\ tax}{100}$ $\times$ $\dfrac{6}{100}$ $\dfrac{595 \times 6}{100}$

$35\frac{7}{10}$
↓
⟨$35.70 Amt Tax⟩
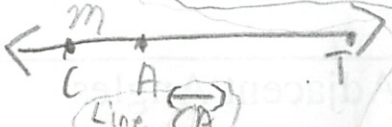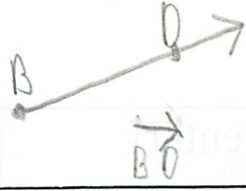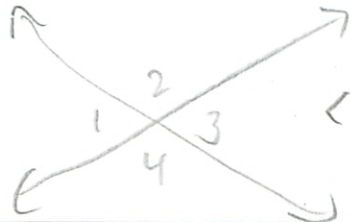
Find the:
Amount of markup: $420
Selling Price: (O) $595
Amount of tax: $35.70
Final Cost: $630.70
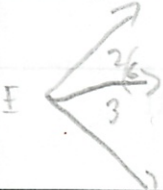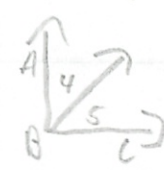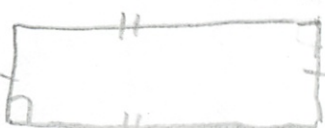
Michael Plasmeier

Geometry Vocabulary

Term	Definition	Illustration
Point	An idea of a location - represented by a dot	N. named point N or N
Line	- infinate set of points extending forever in oppset directions	named with 2 points or its points or lower case cursive m C A T (Line CA)
Line Segment or Segment	- part of line with 2 end point	named with end points B ———— Y BY
Ray	Part of a line with 1 end point and it also extends forever in 1 direction	named w/ its end point + one other point on the ray B D $\overrightarrow{BD}$

Angle	- A union of 2 rays w/ a common end point
	- measured with a protractor
	- labled in degrees (°)
	- kinds/classification
	   - Acute 1-89° Right
	   - Obtuse 91-180°
	   - Straight 180° 90°
		M
		E N <MEN or <E or <1 no arrows Before not on top

Vertical Angles	Angles formed by 2 intersecting lines example <1 + <3 <2 + <4 measures are the same (congruent)	2 1 3 4 name <1 ≅ <3 means congruent

Term	Definition	Illustration
Congruent	equal	Symbol: $\cong$
Perpendicular	2 "lines" that intersect at right angles	line M is perpendicular to line m or $m \perp m$ or $m \perp m$ (Lowercase m cursive)
Adjacent Angles	2 angles with a common ray between them	Common ray is ray F6
Complementary Angles	2 angles who's measures add to 90°	$\angle ABC$ is a right angle Angles 4+5 are complementary
Supplementary Angles	2 angles who's measures add to 180°	angles 6+7 are Supplementary
Parallel Lines	See	
Transversal	Page 6	

Term	Definition	Illustration
Interior angles	Angles on the same side of a parral transversal	See p6
Exterior angles	Angles on the outside side of a parcal transversal	See p6
Corresponding angles	See p 6.	

Triangle	- 3 sided pologon
	- Classification by side
	  Scalene: 3 diff lenghts
	  Isosceles - 2 same angle
	  Equilateral - All same measure
		Angles add to 180°

Vertices		
Acute Triangles	Triangle w/ all acute angles	
Obtuse Triangles	Triangle with 1 obtuse and 2 acute angle	
Right Triangles	Triangle w/ 1 Right angle and 2 acute	

Term	Definition	Illustration
Congruent		
Corresponding Parts		
Similar		
Quadrilateral	a polygon with 4 sides Classification Parallelogram - Rhombus Rectangle - Square - Trapizoid	All of these
Parallelogram	• a quadrilateral w/ oppset sides are ≅ and ≅ 2 sets of parallel sides	
Rectangle	a quadrilateral w/ oppset sides are ≅ and ≅ but 1 pairs of sides are shorter, 4 right angles	
Rhombus	a quadrilateral w/ oppset sides ≅ + ≅ 4 congruent sides	
Square	a quadrilateral where oppset sides are ≅ ≅, 4 ≅ sides, 4 right angles	

Term	Definition	Illustration
Trapezoid	a quadrilletral w/ ~1 pair of opposed sides (∥)	
Polygon		
Regular Polygon		
Equilateral		
Diagonal	a line segment connected 2 non-consective vertices in a poloygon	
Pentagon - 5 sids Hexagon - 6 sid. Heptagon 7 sides (Septagon) Octagon 8 sides Nonagon 9 sides Decagon 10 sids Undecagon 11 sides Dodecagon 12 sides		

Parallel

2 "lines" in the same plane
that remain the same distance
apart

Line w is parallel to line y
$$\text{or}$$
$$w \parallel y$$

Transversal

a "line" or cuts or intersects
2 or more "lines"

$w \parallel t$
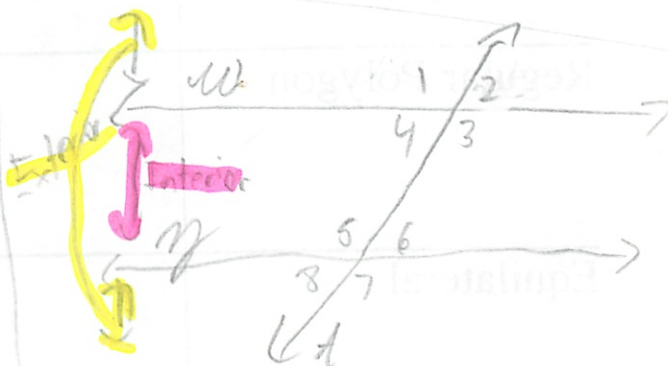
t is a transversal.

Corosponding Angles

Angles that in a transversal are
in the same position, different "hub"

Angle 1 +5
$\angle 2 \cong \angle 6$
$\angle 3 \cong \angle 7$
$\angle 4 \cong \angle 8$

$\angle 4 + 6$ Are alternet + interior
$\angle 3 + 5$ $\cong$

$\angle 1 + \angle 7$ are alternate + exterior
$\angle 2 + \angle 8$ angles are $\cong$

Advanced Integrated Math 7
Review for Finals

1) Evaluate 7m - 3c + h ; if m = 5, c = 4 and h = 3 $\cancel{2}$ 6

2) An airplane went up to an altitude of 40,000 feet. It then went down 7,800 feet, went up 6,500 feet and then down again 430 feet. What was the plane's final altitude? 38,270 ft

3) Does 40000 - 7800 - (-6500) + (-430) represent the airplane's changes in altitude from problem #2? Yes

4) Solve a / -8 = 16 $\quad a = \cancel{-2} \; -128$
Don't simplify, multiply

5) Bob and Bill spent more than $205 while shopping. Bob spent $88. What amount did Bill spend if "b" is the variable for this value? 117 or more

6) The perimeter of a rectangle is 50 inches. Its length is one inch more than three times its width. Find the length of the rectangle. 13 in 19 in

7) In triangle BEN, m<BEN = 46° and m<BNE = 79° . Find the measure of <EBN. 55°

8) Find the volume of cylinder if the radius = 8 cm and the height = 15 cm.
(V = $\pi r^2 h$; use 3.14 for π). $\boxed{9465.216^2}$ $\;\; 304.4 \, cm^3 \;\boxed{3.14 \times 8 \times 8 \times 15}$

9) Solve -4/5 / (-5/4) = m. What is the solution for "m" in simplest form? -1.25 $\; -205\left(\frac{16}{25}\right)$ $\;$ Write out on top
Fraction

10) Elmer sees the bank balance of Super Rich Baron ... $40,000,000,000. What is the number in scientific notation?

4×10^{10}

$\dfrac{-4}{5} \Big/ \dfrac{-5}{4} = \dfrac{-4}{5} \times \dfrac{4}{-5} = \dfrac{-16}{-25} = \dfrac{16}{25}$

11) Shelisa bakes a round cake (for $\widehat{\Pi}$ day) that has diameter of 10 inches. She places a decoration around the circumference of the cake. How long is the decoration? Use 3.14 for $\widehat{\Pi}$ and $C = \widehat{\Pi} D$ *$C = 31.4 cm$*

12) Solve $4y + (-17) = 7y - 2$

$y = -5$

13) Janice buys $30 worth of non-taxable items and some other items taxed at 7.5%. Her total bill is $73. Write an equation to find the cost of the ~~*Didn't*~~ taxable items... where "t" is the total of the other items & then solve for t.

finnish

$(73-30) = t$
$t \times .075 = $ 40

#s 14 - 16. In $\triangle$PEN,
the m<PEN = 35° and
the m<ENP = 72°.
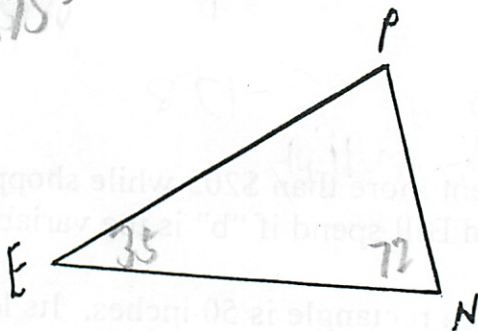
14) What is the m<EPN? *73°*

15) Classify triangle PEN by its sides (scalene, isosceles, equilateral) & by its angles (acute, right, obtuse)

no sides = | 2 sides = | all sides =

all acute angles, scalene triangle

16) How many transformations about angle E can triangle PEN make until it

incomplet Question

Study?

17) The area of a square is 144 sq ft. Find its perimeter.

48 ft

18) Write an ordered pair that is a solution of $4x + 3y = 20$?

$(4,3)$ *$(2,4)$*

19) Write a pair of ratios that form a proportion.

graph

$\frac{1}{2} = \frac{2}{4}$

#s 20 - 22. A package of M&Ms that sells for $.80 has the following contents

Red = 7   Orange = 4   Blue = 9   Brown = 10

Yellow = 12   Green = 8   50

20) What is the percentage of Green?

16%

21) At a constant rate how many red M&Ms will be in a package that contains 150 total?

21 Red's

22) What is the unit cost of one M&M in the original package of M&Ms?

.0106   1.6¢

23) What is the equation of line d in the graph at the right?

$y = \frac{-3}{1}$ $y = -3x + 4$

24) What is the y intercept of the line in question 23?

4

Start Graph

25) If the line y = x was graphed on the same graph as question 23, where would the two lines intersect?

(1,1)   y and x are the same

26) Find the rate of change (slope) in the line that contains the points M(8, 3) and W(6, -5)

4    $\frac{y \, change}{x \, change}$ $\frac{3 - -5}{8 - 6}$ $\left(\frac{8}{2}\right)$ $\frac{4}{4} - \frac{8}{4}$ $\frac{4}{-1}$ (-4)

y-slope   y-intercept

$y = mx + b$

-3) Point
1 over $\frac{y}{x}$

27) A fertilizer is spread at a rate of 40 pounds for 6000 ft². How many pounds are needed are for 21,000 ft²?

140 lbs.

slope = $\frac{y}{x}$
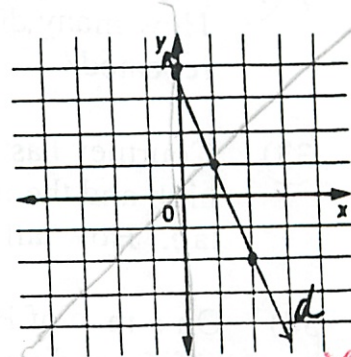
$y = mx + b$

<u>#s 28 - 30</u> Use the figure to the right

28). If the m < 1 = 48⁰ then the m < 5 = ?

    48°

29) If the m < 1 = 48⁰ then the m < 8 = ?

    132°

30) If the m < 1 = 48⁰ then the m < 6 = ?

    132°

m ∥ m.

31) Peter has 4 pairs of socks and 5 pairs of shoes. How many different sock/shoe combinations are possible ?

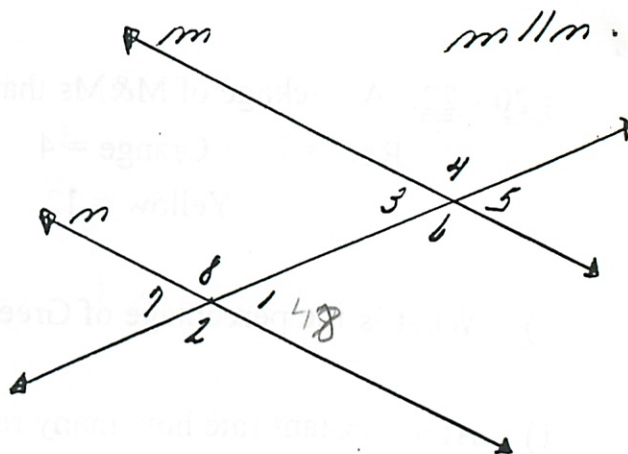   20 Combos   5×5=25

32) Bryers Ice Cream has five flavors that are placed on one type of cone. How many different ways can the flavors be stacked so that no one order is repeated?

    75   120   5×4×3×2×1 = 120

33) Courtney has a photo of herself and her toy dog. Her image is 3.6 inches high and the image of the dog is .9 inches high. Courtney is really 5.6 feet tall. How tall is her dog?

    Stop   1.4 ft

34) On a map of Philadelphia, the scale is 1.5 cm = 600 m. If the Liberty Bell is 5.5 cm distance from the First Union Center on the map, how many meters distance is it actually?

    2200 m

<u>#s 35 - 39.</u> Sharp is having a birthday party in a hall. The hall is 40 m by 12 m. Tables for the hall come in two different sizes; rectangular tables occupy 10 square meters and square tables occupy 8 square meters.

35) How many circular tables will fit in the hall? *rectangle*

48

36) How many square tables will fit in the hall?

60

37) Write two (2) possible combinations of rectangular and square tables.

44R 65S   4R 70S   30,24   10,40

38) Using (R, S) find the fair exchange of tables?
R = # of rectangular tables, S = # of square tables.
Unless are together start w/ one 48,0 →44,5
−4R = +5S

39) So that people may circulate around the room comfortably, the amount of space for tables is reduced to 120 square meters. Find a combination that would be a solution for this constraint exactly. Find a combination that would <u>not</u> be a solution for this constraint?

FM   3R 6 +5S   Start w/ one (10S, 4R)
Mb1   58S − 3R S

40) Find the area of a trapezoid with base (a) of 8 inches, base (b) of 16 inches and (h) height of 12 inches. [A=1/ 2 (a+b) h] 144 in^2

41) The gatekeepers at the stadium estimate that 700 fewer fans came to last week's football game than the number of fans that attended this week's game. If 2045 fans attended last week's game, how many fans attended this week's game?   *About 1265 fans*   2745

42) Edward and Colleen are playing a board game. Edward's scores for the last five rounds of the game have been   9, 4, -5, 7, and -8   . Find Edward's total score for the last five rounds.
7 pts

43) Marge pours two gallons of apple juice into paper cups. Each cup holds eight ounces of juice. How many cups can Marge fill completely with apple juice? (1 gallon = 128 ounces)
32 cups

44) For his market, Jack buys 9 full cases of chicken soup and gets a bonus of 5 extra cans of soup. He receives 230 cans of soup altogether. Find the number of cans in one case of soup.
25 cans

45) Find the y-intercept of the graph of $y = -5x + 7$

7

46) An icicle melts away half its length every day. If the icicle is 32 inches long at the beginning of the first day, how long is the icicle at the end of the fifth day?

1 in   2 in

47) Tony has to replace the bottom panel in a door. The panel is shaped like a square measuring 25 inches on a side (s). Find the area of the panel Tony must buy. $(A = s^2)$

625 in

48) Loretta is putting a fence around her garden. The garden is shaped like a rectangle 32 feet wide and 40 feet long. How many feet of fencing does Loretta need?

144 ft

49) The area of a rectangle is 28 sq cm. The perimeter of the same rectangle is 22 cm. Find the length and width of the rectangle.

7×4 cm

50) Find the volume of a rectangular prism with length (L) of 14 inches, width (W) of 8 inches and height (H) of 5 inches. $[V = LWH]$

560 in³

51) Solve for k: $-7k - 19 = 9$

k = -4

52) Solve for m: $8m - 14 = 17m + 4$

m = -9

$8m - 14 = 17m + 4$

$8m = 17m + 18$

$-9m = 18$

$-2m = 9$

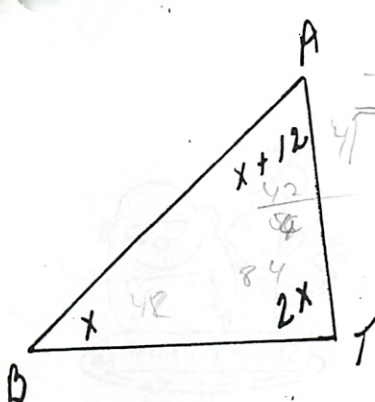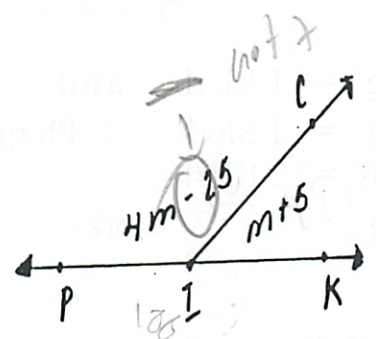## Figure 1

A

$x+12$

$2x$

x

B

T

(handwritten work: 180, -12, 42, 4/168, 42, 4, 84, 42)

Figure 1

Figure 2

C

$4m-25$

$m+5$

P

I

K

(handwritten: not x, 180, 186, 180, 175, +25, 6/240)

Figure 2

Figure 3

E

m

$m+15$

m

J

O

K

(handwritten: 180, -15, 165, 3/68, 53, 180, -53, 127)
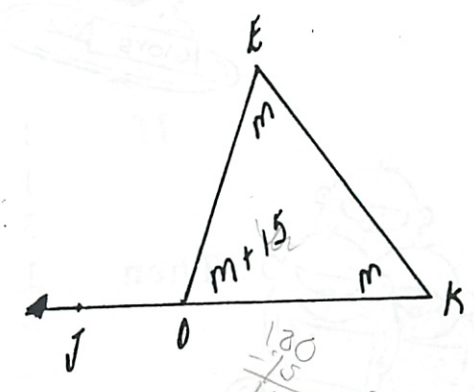
Figure 3

53) Find the value of X in Figure 1

42°

54) Find the measure of < BAT in Figure 1

54°

55) Find the measure of < BTA in Figure 1

84°

56) Find the measure of < PIC in Figure 2

160° 135°

57) Find the value of M in Figure 3

53 55°

58) Find the measure of < JOE in Figure 3

127° 118°

(handwritten red work):

One Equation

$4m-25 + m+5 = 180$

$5m - 20 = 120$

$5m = 200$

$1m = 40$

$5/200$

160
-25
135

#s 59 - 61   In the combination chart at the right, some of the squares have circles in them. Find the numbers that go in the circles.

59) Circle A would contain what number?

75

60) Circle B would contain what number?

10

61) Circle C would contain what number?

90

(combination chart):

					C
	35			80	
B	25		55	70	
O	15	30	45	60	A

T 1.0

15 →

62) ~~×~~

If   1 Glorg =   1 Blorb   **and**
       1 Glorg =   1 Slork + 1 Plorp   **and**
       3 Plorps =   2 Blorbs

Then   1 Glorg   = ? Slorks

$1B = 1G + 1P$

$1G = 1.5S$

$6G = 6S + 2G$ $2G = 3S$ ③
$4G = 6S$

66 86
$6S + 6P$ $3S + 3P$
$6S + 2B$ $3S + 2B$
$6S + 2G$ $3S + 2G$
           $5S + 2P$
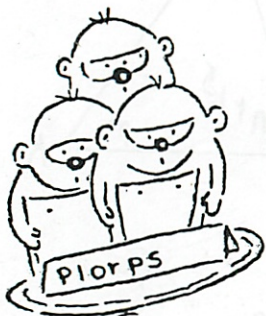
$1G = 1B = 1G = 1S + 1P$
$3P = 2B$
$1G = ?S$

#s 63 - 65   Use the spinner, at the right, for question

63)   What is the probability of spinning **Pink** ?
     $\frac{2}{8}$ or $\frac{1}{4}$

64)   What is the probability of spinning a color other than **Aqua** ?
     $\frac{7}{8}$

65)   What is the probability of spinning **Blue** ?
   $\frac{2}{8}$ or $\frac{1}{4}$

$1B = 1S + 1P$
$2B = 2S + 2P$

$3P = 2S + 2P$
$1P = 2S$

$1G = 1S + 3S$
$1G = 3S$

michael P