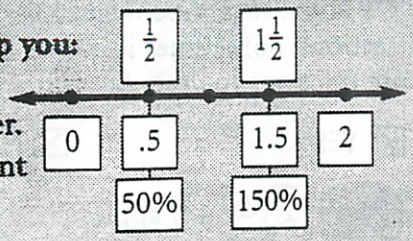
Number Relations: Compare, Order

A number line can help you:
- compare numbers.
- ☑ put numbers in order.
- ☑ understand equivalent forms of numbers.



Number Sense

Test Tip!

Sometimes the largest number is the winner.
- ☑ runs in baseball

But sometimes the smallest number wins!
- ☑ strokes in golf

A DIRECTIONS: Order the decimals from greatest to least. Write T for True or F for False.

1.	4.323	4.42 Greatest
2.	4.42	4.4
3.	4.233	4.323
4.	4.4	4.24
5.	4.24	4.233 Least

6.	F	4.42 < 4.323
7.	T	4.233 < 4.4
8.	F	4.323 < 4.233
9.	T	4.42 > 4.24
10.	T	4.4 < 4.42

11.	F	6.29 > 6.92
12.	T	5.381 > 5.318
13.	T	1.015 < 1.510
14.	T	15.52 > 15.25
15.	F	4.440 < 4.044

16.	F	.06 > .6
17.	F	.099 > .11
18.	F	4.921 < 4.291
19.	T	1.011 < 1.101
20.	F	.5 < .45

B DIRECTIONS: While researching the California Gold Rush, Marcy came across a record of the amount of gold five miners found one day. Use the record to complete the charts.

Record: July 14, 1849	
Name	Weight (oz.)
C. Jeffries	10.302
L. Cortese	11.032
Van Horn	10.516
B. Ellis	10.032
K. Garcia	10.156

Order the weights from *least to greatest.*

10.032 oz.
10.156 oz.
10.302 oz.
10.516 oz.
11.032 oz.

Caught self

July 14, 1849		
	Name	Weight
First Place	Van Horn	10.516
Second Place	C. Jeffries	10.302
Third Place	K. Garcia	10.156

C DIRECTIONS: In each row circle the three quantities that have the same value. Then complete the chart.

Why did I write wright in red

1.	6.4	$\frac{16}{25}$	64%	.64	6400	64	640
2.	25	.25	$\frac{5}{2}$	$\frac{25}{100}$	52%	25%	.2
3.	.15	1.5	15	.5	$\frac{15}{100}$	15%	$\frac{15}{10}$

Fraction	Decimal	Percent
1. $\frac{3}{5}$	.6	60%
2. $\frac{4}{10}$	.4	40%
3. $1\frac{1}{2}$	1.5	150%

Practice Test: Fill in the circle of each correct answer.

1 Which number sentence is not true?

A 4.004 < 4.04
C 2.701 < 2.710
B 3.794 > 3.792
D .105 < .015

2 Which shows the value of $1\frac{1}{4}$ written as a fraction, decimal, and percent?

F $\frac{5}{4}$ 125% 1.25
H $1\frac{1}{4}$ 16.2% 16.2
G $\frac{4}{5}$ 216% 20.16
J $2\frac{1}{6}$ 162% 1.62

3

FOOD	Weight (ounces)
Energy Bars	10.43
Powdered Milk	10.24
Trail Mix	10.42
Oatmeal	11.34
Pasta	10.94

Marcy is packing for her hiking trip. She must choose the three foods that weigh the least. Which shows her choices?

A Milk, Trail Mix, Energy Bars
B Pasta, Milk, Trail Mix
C Oatmeal, Energy Bars, Trail Mix
D Milk, Oatmeal, Trail Mix

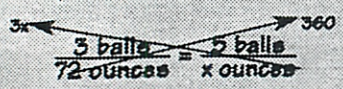
Skill: Number and Number Relations: Number Line; Compare, Order; Equivalent Forms

1. (A) (B) (C) (D) 2. (F) (G) (H) (J) 3. (A) (B) (C) (D)

Number Relations: Ratio and Proportion

A *proportion* is an equation that helps you solve for missing information. Set one ratio equal to another and solve for *x*.

Like this: If 3 balls weigh 72 ounces, how many ounces would 5 balls weigh?



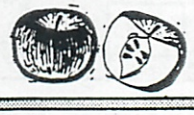
Ⓐ Ⓑ Ⓒ Ⓓ

A 12 B 15 C 120 D 360

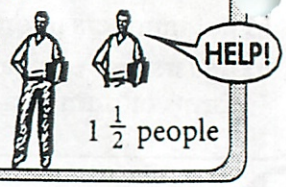
Be Reasonable! Test Tip!

It is not always *reasonable* to use fractions. Sometimes it is not practical to use fractions to describe a situation.

☑ YES ☒ NO



1 $\frac{1}{2}$ apples



1 $\frac{1}{2}$ people

A DIRECTIONS: Use the fractions in the first column to complete the chart.

	Fraction	How many in 1?	How many in 2?	How many in $3\frac{1}{2}$?
1.	$\frac{1}{2}$	2	4	7
2.	$\frac{1}{8}$	8	16	28
3.	$\frac{1}{4}$	4	8	14
4.		6	12	21

B DIRECTIONS: For each problem, circle the answer that is correct and reasonable.

1. If each van holds 8 passengers, how many vans are needed to transport 52 people?

   $6\frac{1}{2}$ vans (7) vans

2. At 40 miles per hour, how long does it take to travel 100 miles?

   ($2\frac{1}{2}$) hours 3 hours

3. If a dump truck holds 8 tons of gravel, how many trips from the quarry would be required to transport 60 tons?

   $7\frac{1}{2}$ trips (8) trips

C At first glance, these problems look alike, but they are *not the same*. Read carefully. Show your work. Answer the exact question that is asked.

1a. Marty used $1\frac{1}{4}$ gallons to paint each room. How many rooms could he paint with 10 gallons?

—Work Space

Answer $7\frac{1}{4}$

1b. Marty used $1\frac{1}{4}$ gallons to paint each room. How many gallon cans must he buy to paint 10 rooms?

—Work Space

Answer 13 cans

2a. If $\frac{1}{4}$ pound of fertilizer is needed to fertilize each juniper, how many pounds are needed to fertilize 15 junipers?

—Work Space

Answer 3.75 pounds

2b. If $\frac{1}{4}$ pound of fertilizer is needed for each juniper, how many 2-pound bags of fertilizer must Elsa buy to fertilize 15 junipers?

—Work Space

Answer 2 bags

Practice Test: Fill in the circle of the correct answer.

1 The upholsterer used 33 feet of cording to trim 24 chairs. How many feet of cording will be needed to trim two more chairs?

A $1\frac{3}{8}$ C $2\frac{3}{4}$

B $3\frac{3}{4}$ D $6\frac{3}{8}$

👀 **Look!** *Is it reasonable to use fractions? How can you tell?*

1. Ⓐ Ⓑ Ⓒ Ⓓ

Measurement: Length, Perimeter

* If the problem shows a diagram, you *probably* need information from the diagram to solve the problem.
* If the problem does not show a diagram, it just might help to draw one yourself.

Be a Math Artist!

Test Tip!

Practice drawing simple diagrams to help solve math problems.

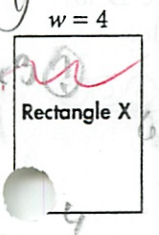
The more you practice, the better you get!

A DIRECTIONS: Use the work space to practice drawing diagrams. Solve each problem.

1. The perimeter of the rectangle is 30. The width of the rectangle is 3. *What is the length?* _____ 12 units

30-6=24 12 [ ] 12

2. The area of the rectangle is 16. The perimeter of the rectangle is 20. *What are the dimensions?* _____ 2×8

3. 

If the length of Rectangle X were doubled, its perimeter would increase by 12.
What is its length? 6 or 3
What is its perimeter? 20 or 14
What is its area? 24 or 12

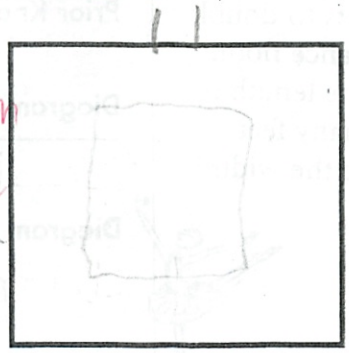
4. Marcia folded her 8" × 12" scratch paper to make 8 sections of equal size. What is the area of each section? _____ 12 in²

Work Space

4×6 | 2
2×3 | 4
1×1.5 | 6
not perimeter

Do 8×12 then divide in to 8 sections

B DIRECTIONS: Draw a square in the middle of the square below; so that when it is cut out and removed, the area of the big square would decrease by 25%.



Use cm not ins.

2.5 × 2.5 = 6.25

Of course you can do it! Here's how:

1. Use your centimeter ruler to measure the sides. Then figure the area. A = [redacted] 16

2. Find 25% of the area.
.25 × [redacted] = [4] cm
This is the area of the cut-out square!

3. Now use the area of the cut-out square to help you figure out its length and width.
[2] (l) × [2] (w) = [4] (A)

4. Now use your centimeter ruler to measure and draw the cut-out square.

Practice Test: Fill in the circle of each correct answer.

1 **Use your centimeter ruler to help answer this question.**

2/8 = 1/4

If 2 cm were erased, by what percent would the length of the line be reduced?

A 20% (B) 25% C 60% D 75%

2 **For which rectangle would the perimeter and the area be the same?**

F 2 inches × 2 inches
G 4 inches × 4 inches
H 2 inches × 3 inches
J 2 inches × 4 inches

1. (A) (B) (C) (D) 2. (F) (G) (H) (J)

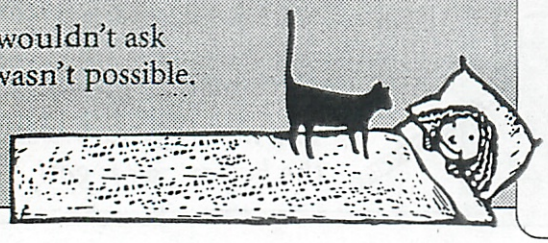
Measurement: Mixed Skills

Gather All Your Resources!

Test Tip!

REST ASSURED.

The "test people" wouldn't ask the question if it wasn't possible.



Baffled by the Question?
Don't panic!

Use all of your available resources:

- Diagrams
- Answer choices
- Prior knowledge
- Common sense

A DIRECTIONS: Use all of your resources to solve each problem.

PROBLEM	AVAILABLE RESOURCES

1. Mr. Barrow wants to double the size of the dance floor. If he increases the length by 4 feet, by how many feet must he increase the width?

Prior Knowledge: Area = *length* × *width*

Diagram #1:

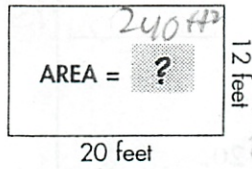


Diagram #2: (*You draw!*)

Just try answer choices :)

Answer Choices:

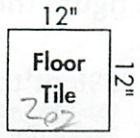
A 8
B 10
C 20
D 480

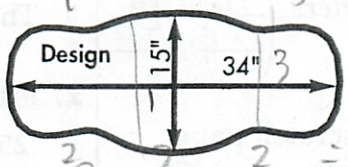
Common Sense:
Answer choice D is not reasonable.

Ⓐ Ⓑ Ⓒ Ⓓ

2. If two ounces of paint are needed to cover each floor tile, about how many ounces of paint would be needed to paint the design on the floor?

Diagrams:





Common Sense:

34" is almost as long as _____ tiles.

15" is a little wider than _____ tile.

Answer Choices:

F 3
G 6
H 12
J 20

Ⓕ Ⓖ Ⓗ Ⓙ

3. Maggie paid $11.20 for the cheese shown on the scale. What was the price per pound for the cheese?

Diagram:

Prior Knowledge:
3.5 is halfway between 3 and 4.

Answer Choices:

A $1.29
B $2.87
C $3.20
D $3.45

Ⓐ Ⓑ Ⓒ Ⓓ

Practice Test: Fill in the circle of each correct answer.

1 **The temperature at midnight was 6° F. If the temperature dropped three degrees per hour, at what time was the temperature -15° F?**

A 3:00 A.M.
B 4:00 A.M.
C 7:00 A.M.
D 9:00 A.M.

2 **Which best estimates the average of the numbers in the box?**

23	15	10	30	17	23

Hint: Do not compute. Reorder the numbers from least to greatest, then use common sense!

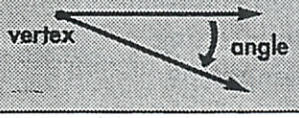
F 10
G 15
H 20
J 25

1. Ⓐ Ⓑ Ⓒ Ⓓ 2. Ⓕ Ⓖ Ⓗ Ⓙ

Geometry: Angles

Angles are formed by two rays with a common endpoint.

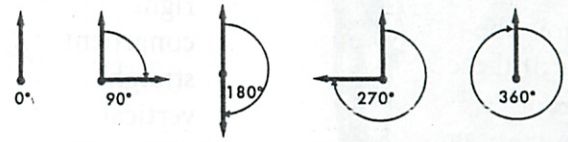
The common endpoint is called the vertex.



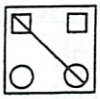
Welcome to Rotation Station!

Test Tip!

All the way around is 360°.
Halfway around is 180.



A DIRECTIONS: Draw each rotation.

OBJECT	90° ROTATION	180° ROTATION	270° ROTATION
1. 			
2. 			
3. 			

B DIRECTIONS: Use the words from the shaded box to fill in the blanks.

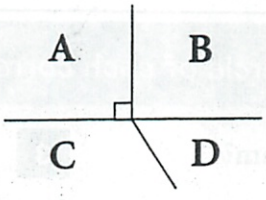
Turn Page Around :)

parallel
vertical
obtuse
acute
right
slanted
perpendicular
straight
horizontal

1. A right triangle has two acute angles.
2. Capital A has two slanted line segments and one vertical line segment.
3. An angle that measures 180° is called a(n) straight angle.
4. A rectangle has four right angles.
5. parallel lines never intersect.
6. Capital N has one slanted line segment and two perpendicular line segments.
7. horizontal lines intersect at right angles.
8. An angle that is more than 90° but less than 180° is obtuse.

C DIRECTIONS: Write *acute*, *obtuse*, *straight*, or *right* to identify each angle.

1. 25° acute
2. 60° acute
3. 145° obtuse
4. 180° straight
5. 15° acute
6. 90° right
7. 45° acute
8. 120° obtuse



9. Angle B right
10. Angle C obtuse
11. Angle D acute
12. Angles A and B together form a(n) straight angle.

Practice Test: Fill in the circle of each correct answer.

1 Mariah twirled around $2\frac{1}{2}$ times. How many degrees did she twirl altogether?

A 180°
B 362.5°
C 720°
D 900°

360
360
180
900

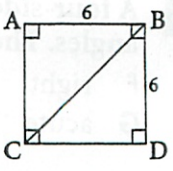
2 The spinner must move about how many degrees clockwise to reach 4?

F 45°
G 90°
H 270°
J 360°

Not exact

3 What is the measure of angle BCD?

A 30°
B 45°
C 60°
D 90°



1. (A) (B) (C) (D) 2. (F) (G) (H) (J) 3. (A) (B) (C) (D)

Geometry: Geometric Properties

Test Tip!

Know your angle, line, and shape vocabulary.

If you know the meanings of these words, the questions are easy.

Know These Terms:

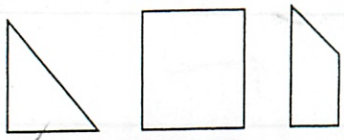
ANGLE:	**LINE:**	**SHAPE:**
acute	parallel	triangle
obtuse	perpendicular	quadrilateral
right	intersecting	pentagon
congruent (equal)	congruent	hexagon
straight		square
vertical		rectangle
		parallelogram

(Study words)

A

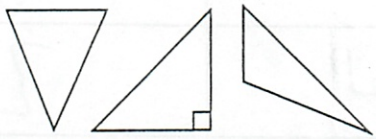
DIRECTIONS: Place a check in the box if the underlined term could be used to describe all three figures.

1.



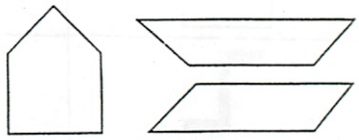
- ☑ contains a right angle
- ☐ is a quadrilateral (need 4 sides)
- ☐ has parallel sides

2.



- ☐ angles and sides are congruent
- ☐ is an equilateral triangle
- ☑ contains an acute angle

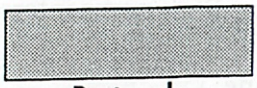
3.



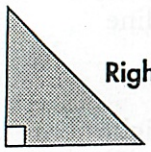
- ☑ contains an obtuse angle
- ☐ is a quadrilateral
- ☑ contains perpendicular lines

B

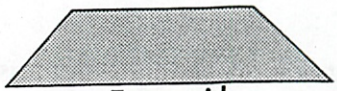
DIRECTIONS: Match each riddle to a shape. Write the name on the line.



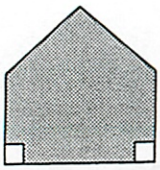
Rectangle



Right Triangle



Trapezoid



Pentagon

Riddle 1

I am a quadrilateral.
I have exactly one set of parallel sides.
I have two acute angles.
What am I?

Trapezoid

Riddle 3

The sum of my angles is 360°.
I have two pairs of parallel sides.
I am classified as a parallelogram.
What am I?

Rectangle (watch out! Similar)

Riddle 2

The sum of my angles is 180°.
I have two acute angles.
I have no obtuse angles.
What am I?

Right Triangle

Riddle 4

I have two right angles.
I have two obtuse angles.
My diagonals form a star.
What am I?

Pentagon

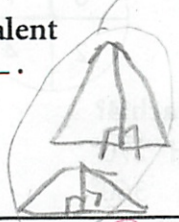
Practice Test: Fill in the circle of each correct answer.

1 Which could describe a parallelogram?

- A four right angles
- B four acute angles
- C two right angles, and two acute angles
- D four obtuse angles

2 A four-sided figure has four equivalent angles. These angles are all _____.

- F right
- G acute
- H straight
- J 45°



3 Two congruent right triangles placed side by side could not form

- A an isosceles triangle.
- B a parallelogram.
- C a rectangle.
- D a trapezoid.

(Can be like this)

4 Which could not be used to describe two sides of a triangle?

- F slanted
- G intersecting
- H parallel
- J perpendicular

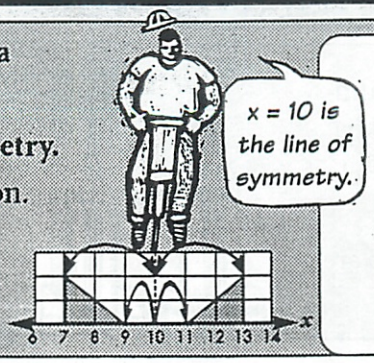
1. (A) (B) (C) (D) 2. (F) (G) (H) (J) 3. (A) (B) (C) (D) 4. (F) (G) (H) (J)

Spatial Sense: Transformations

Sometimes you must find the vertices of a shape reflected on a coordinate plane.

The first step is to find the line of symmetry.

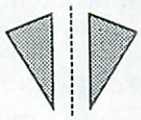
- ☑ First, look at the shape and its reflection.
- ☑ Find the line that is the same distance from each pair of corresponding sides.
- ☑ This is the line of symmetry.



Test Tip!

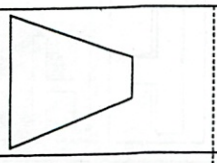
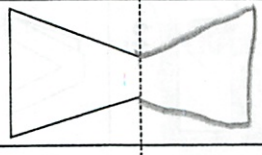
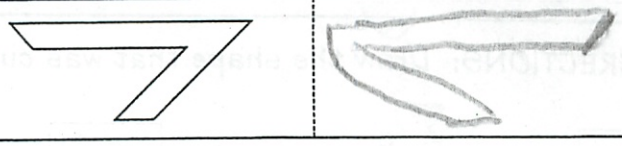
Mirror, Mirror...

A *reflection* is a flip across a line of symmetry.



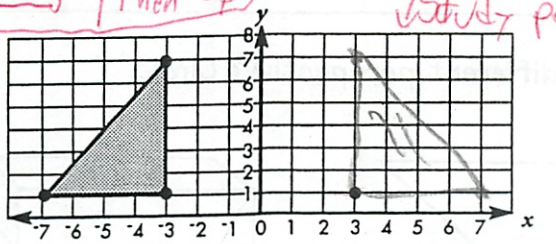
A *vertex* is the common endpoint of two rays or two line segments. *Vertices* is the plural of *vertex*.

A DIRECTIONS: First, let's practice without the coordinate plane. Draw the reflection of each shape across the line of symmetry.

1. 
3. 
2. 
4. 

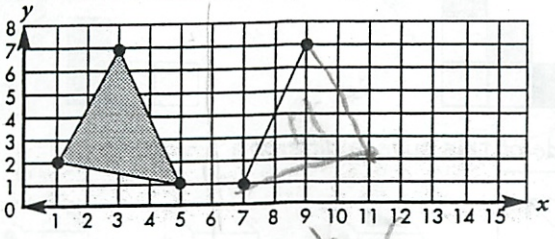
B DIRECTIONS: Now, complete the reflections on the coordinate plane. Identify the line of symmetry. Write the coordinates of the vertices of the reflected shape.

Over 1st Then up study points

1. 

Line of symmetry: x = 0

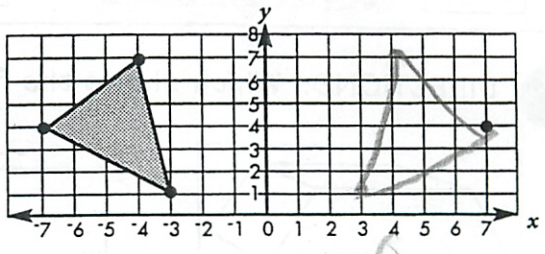
Careful here! Note the line of symmetry.

2. 

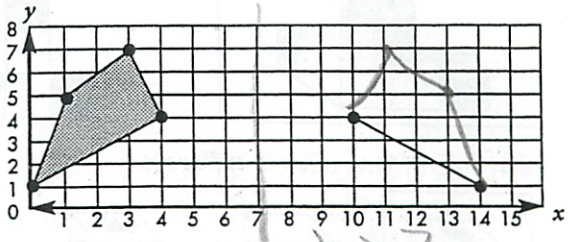
Line of symmetry: x = 6

Vertices

1. (3, 1) (3, 7) (7, 1)
2. (7, 1) (11, 2) (9, 5)
3. (3, 1) (7, 4) (2, 3)
4. (10, 4) (,) (,) (,)

3. 

Line of symmetry: x = 6

4. 

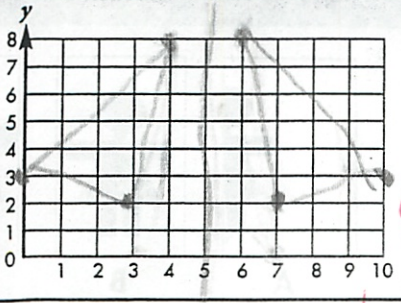
Line of symmetry: x = 7

Practice Test: Plot the points, then answer the questions.

Triangle A
(3, 2) (0, 3) (4, 8)

Triangle B
2) (,) (6, 8)

*Triangle B is a reflection of Triangle A



1 Over what line of symmetry was triangle A reflected to form triangle B?

A $x = 4$ B $x = 5$ C $x = 6$ D $x = 8$

2 Which represents the third vertice of Triangle B?

F (8, 3) G (2, 3) H (3, 10) J (10, 3)

Here

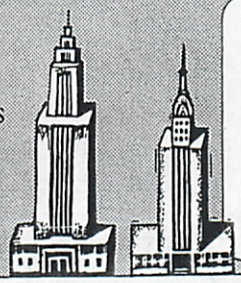
Check Work

1. A B C D 2. F G H J

Spatial Sense: Spatial Reasoning

When math problems contain drawings and shapes, don't choose the answer too quickly!

- ☑ Pay close attention to how the answer choices are alike and how they are different.
- ☑ Understand that some answer choices are *close*, but not exactly correct.



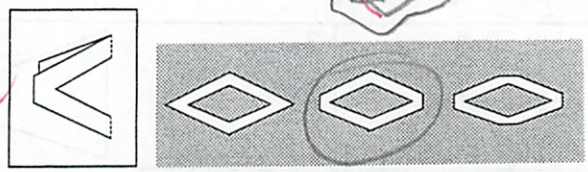
Close Isn't Good Enough!

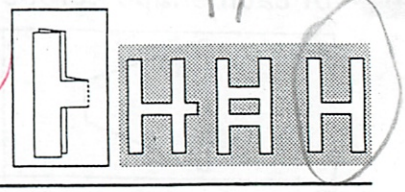
Test Tip!

- Close is okay in estimation, but <u>not</u> with shapes.
- Don't be tricked by answer choices that are *almost correct.*

A DIRECTIONS: First, draw the unfolded object. Then circle the one correct answer.

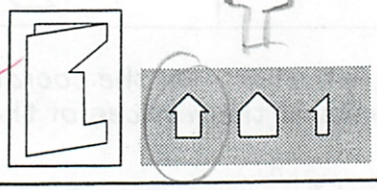
1. 

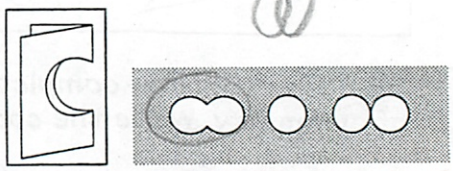
2. 

3. 

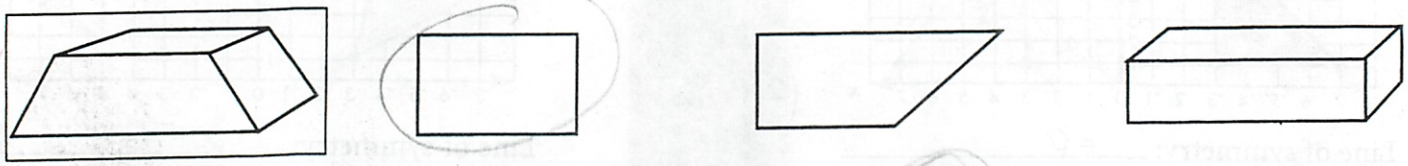
B DIRECTIONS: Draw the shape that was cut out. Circle the one that is *exactly correct.*

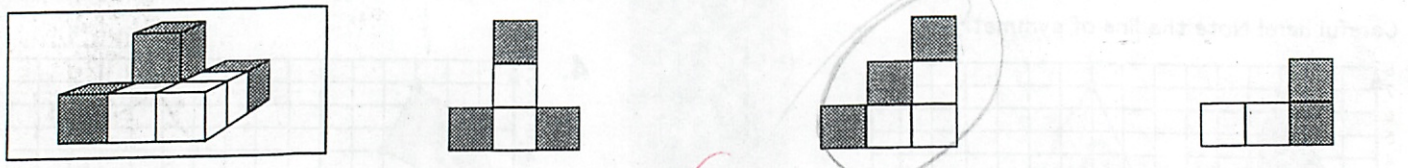
1. 

2. 

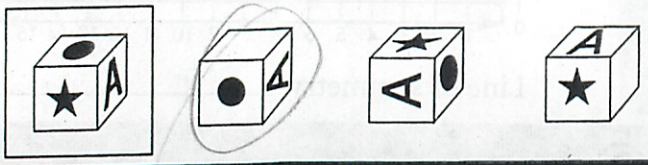
3. 

C DIRECTIONS: Which shows the figure viewed from a different perspective? Circle.

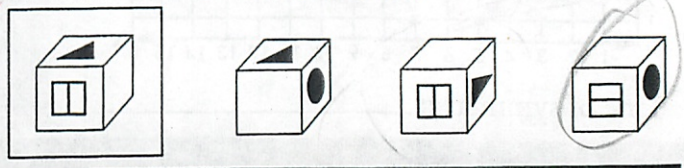
1. 

2. 

3. Each side of this cube is *different.*

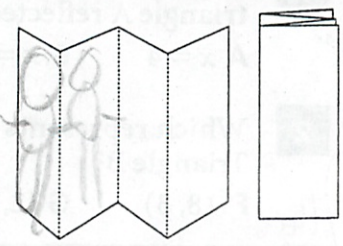


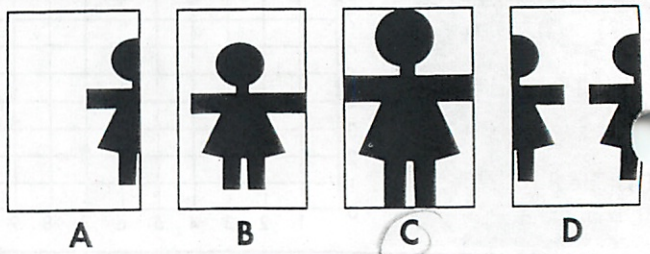
4. Each side of this cube is *different.*



Practice Test: Fill in the circle of the correct answer.

1 If the piece of paper is folded as shown, which cutout would make a string of four connected paper dolls?





A B C D

1. Ⓐ Ⓑ Ⓒ Ⓓ

Data Analysis: Read, Interpret Graph

- Charts and graphs show a lot of information in a small space.
- Sometimes you must use more than one chart to answer a question.

PREVIEW! **Test Tip!**

Look over the graph or chart before you begin to answer the questions.

Read the words along the top, bottom, and side.

A

DIRECTIONS: Preview both charts. Then answer the questions. Tell which charts you need to answer questions 3-5.

Chart I

To determine zone, use the first three digits of the customer's zip code.

ZIP Code Prefixes	Delivery Zone	ZIP Code Prefixes	Delivery Zone
010-041	4	293	2
042-049	1	294-295	3
050-089	5	296-299	2
090-099	6	300-312	2

Chart II

To determine cost of delivery, use zone and weight.

Weight Not to Exceed	Delivery Zones 2	3	4	5	6	7	8
1 lb.	$2.35	$2.50	$2.74	$2.83	$2.92	$3.00	$3.07
2 lb.	2.37	2.54	3.02	3.13	3.35	3.45	3.70
3 lb.	2.47	2.71	3.22	3.38	3.65	3.76	4.09
4 lb.	2.58	2.87	2.35	3.55	3.79	3.99	4.38
5 lb.	2.70	3.00	3.43	3.64	3.97	4.18	4.61

1. More than likely, for what purpose are these charts used? Shipping different weight package to different zip codes

2. Tell the steps for using the charts together:
   First, use Chart I to determin zone code
   Then, use Chart II to determin price

3. In what delivery zone is the zip code 29701?
   A 1 B 2 C 3 D 4 — Chart I, Chart II

4. How much would it cost to send a 4-pound package to delivery zone 6?
   F $3.64 H $3.97
   G $3.79 J $4.14 — Chart I, Chart II

5. Mr. Wu paid $3.38 to send a 3-pound package. To which zip code might he send the package?
   A 04236 C 01304
   B 07599 D 29307 — Chart I, Chart II

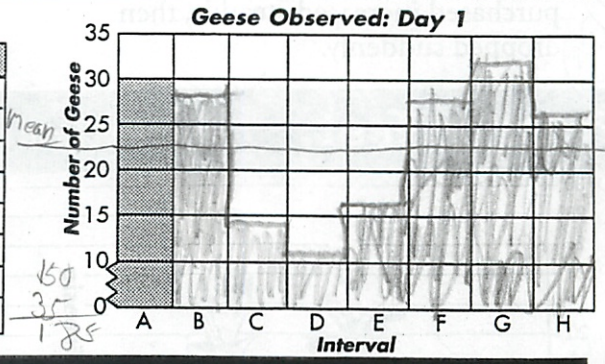
B

DIRECTIONS: The Manchester Bird Club is spending two days counting geese. Their findings from the first day are shown on the chart.

Transfer this information to the bar graph.

Day 1: Geese Count

Interval	Time Period	Count
A	6:00 A.M. - 8:00 A.M.	30
B	8:00 A.M. - 10:00 A.M.	27
C	10:00 A.M. - 12:00 noon	14
D	12:00 noon - 2:00 P.M.	11
E	2:00 P.M. - 4:00 P.M.	16
F	4:00 P.M. - 6:00 P.M.	28
G	6:00 P.M. - 8:00 P.M.	32
H	8:00 P.M. - 10:00 P.M.	26



Practice Test: Use the chart and graph in activity B to answer questions 1-5.

1 During which time period were the most geese sighted?
A 6 A.M. - 8 A.M. C 4 P.M. - 6 P.M.
B 10 A.M. - 12 noon D 6 P.M. - 8 P.M.

2 On Day 1, members counted in teams of two. There is an uneven number of members, so one person must count alone on Day 2. Based on Day 1 data, when would be the best time to schedule this person's arrival?
F 8:00 A.M. H 12:00 noon
G 6:00 A.M. J 4:00 P.M.

3 Which best describes the team for interval F?
A arrived at 2 P.M., saw 18 geese
B arrived at 4 P.M., saw 28 geese
C arrived at 6 P.M., saw 28 geese
D arrived at 4 P.M., saw 20 geese

4 Figure the average (mean) number of geese sighted during Day 1: 23

5 During how many intervals on Day 1 were more than the average (mean) number of geese sighted? 5

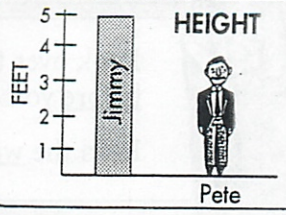
Skill: Data Analysis, Statistics and Probability: Read Line Graph; Interpret Data Display

1. A B C D 2. F G H J 3. A B C D

Data Analysis: Graphs, Charts

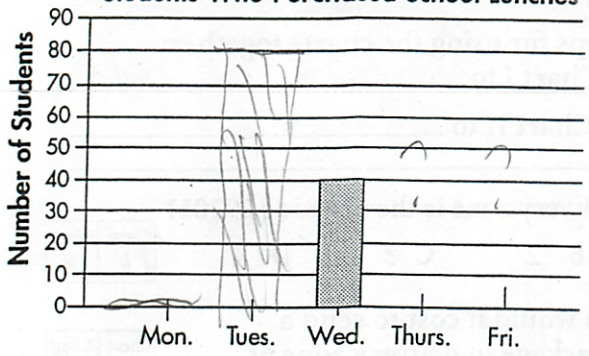
- ☑ There are many different types of graphs:
  • Line • Bar • Circle • Picture
- ☑ Different types of graphs can show the same type of information.

LOOK! Test Tip!



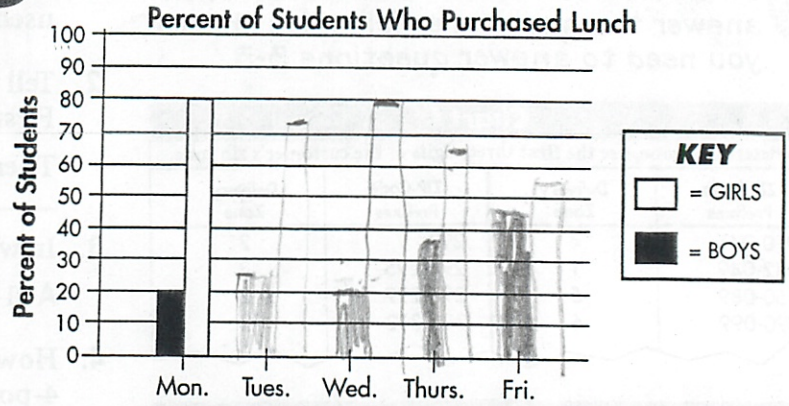
On some charts, a picture is used instead of a rectangular bar. *They both work the same way!*

A DIRECTIONS: Complete the bar graph to show the information. The first one is done for you.



- ☑ **A** Forty students purchased school lunch on Wednesday.
- ☑ **B** The number who purchased school lunch on Thursday was twice as many as Wednesday.
- ☑ **C** The school was closed on Monday.
- ☐ **D** Over the week, the number of lunches purchased increased steadily, then dropped suddenly.

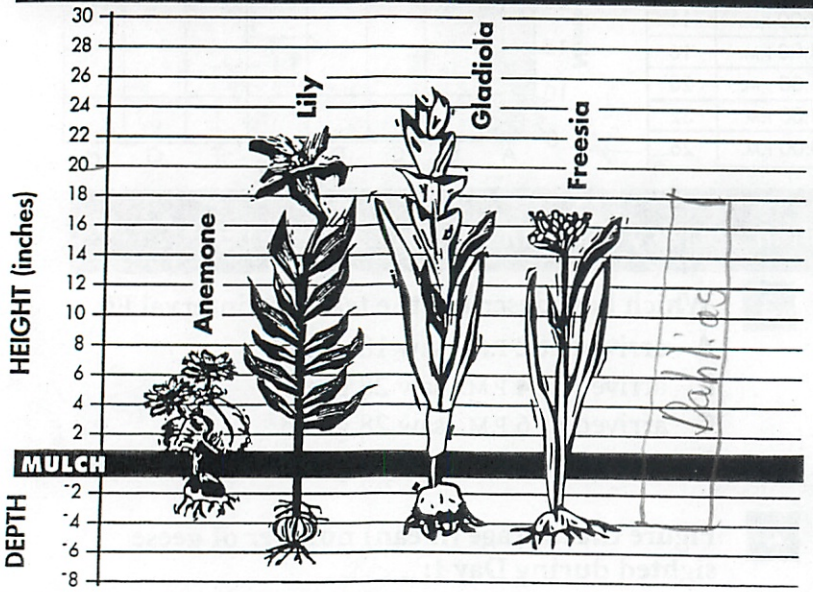
B DIRECTIONS: Complete the bar graph.



Hint: Read all of these before you begin to draw.

- ☑ **A** 20% of the students who purchased lunch on Monday were boys.
- ☑ **B** More girls than boys purchased lunch on Tuesday.
- ☐ **C** The percent of girls who purchased lunch suddenly dropped after a period of little change.
- ☐ **D** About the same number of girls as boys purchased lunch on Friday.

Practice Test: Fill in the circle of each correct answer.



1 How many of the flowers shown reach a height greater than 20 inches?

A 1 B 2 C 3 D 4

2 Mary Lynne wants to plant flowers that will cover up her water meter. If the water meter is 1 foot tall, which flower would not be a good choice?

F anemone H gladiola
G freesia J lily

3 

Typically, dahlias grow to 18 inches. Bulbs should be planted 4 inches below the mulch line. Add dahlia to the graph.

4 Can it be concluded from the graph that the deeper the bulb is planted, the taller the flower will grow? ☐ Yes ☑ No

Explain your answer: Gladiola is taller than Lily, even though its bulb is higher

1. A B C D 2. F G H J

Statistics

Know your statistics vocabulary:

MEAN
The *mean* is the average. To find the *mean*, divide the sum of the data items by the number of items.

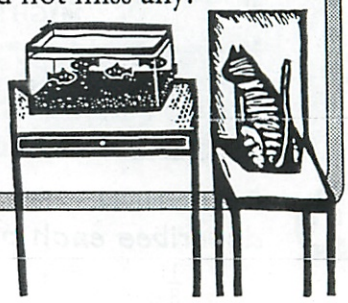
MEDIAN
The *median* is the data item in the middle. To find the median, arrange the items from smallest to largest, and select the middle item.

MODE
The *mode* is the data item that appears the most times. Remember this: "Mode-most"

RANGE
The *range* tells how spread out the data items are. To find the *range*, subtract the smallest item from the largest item.

Be Careful! Test Tip!

Always count the number of *data items* twice to make sure you did not miss any!



A

DIRECTIONS: Use the definitions shown above to answer these questions about the weight of the dogs in obedience class.

Jessie 60 lb. | Scooter 48 lb. | Precious 42 lb. | Max 50 lb. | BoBo 45 lb. | Shadow 45 lb. | Starsky 46 lb.

1. What is the mode?
   A 18 C 46
   B 45 D 48
   (A) (B) (C) (D)

2. What is the mean?
   F 18 H 46
   G 45 J 48
   (F) (G) (H) (J)

B

DIRECTIONS: Now arrange the dogs weights from the lightest to the heaviest to answer these questions.

42	45	45	46	48	50	60

lightest → heaviest

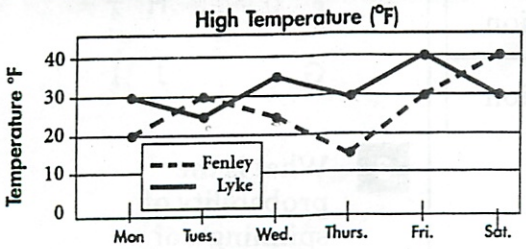
1. What is the range of weights?
   A 18 C 46
   B 45 D 48
   (A) (B) (C) (D)

2. What is the median?
   F 18 H 46
   G 45 J 48
   (F) (G) (H) (J)

Frobisher 40 lb.

3. If Frobisher joins the dog obedience class, by how many pounds will the average (mean) decrease?
   A 0 B 1 C 2 D 20
   (A) (B) (C) (D)

Practice Test: Transfer the information shown on the graph to the chart. Then fill in the circle of the correct answer.



High Temperature (°F)

DAY	Fenley	Lyke
Mon.	20°	30°
Tue	30°	25°
Wed	25°	35°
Thrus	15°	30°
Fri	30°	40°
Sat	40°	30°

1 What was the range of high temperatures in Fenley from Wednesday through Saturday?
A 10 C 20
B 15 D 25

2 What was the mode of high temperatures in Lyke?
F 15 H 35
G 30 J 40

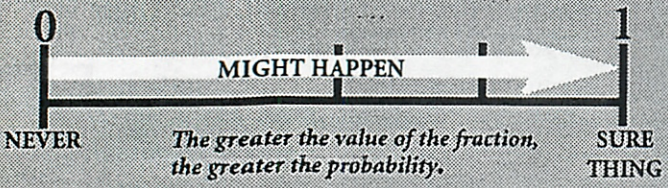
3 For how many days was the high temperature in Fenley greater than the high temperature in Lyke?
A 2 B 3 C 4 D 5

4 For how many days was the high temperature in Lyke above its mean temperature for the week?
F 1 G 2 H 3 J 4

1. (A) (B) (C) (D) 2. (F) (G) (H) (J) 3. (A) (B) (C) (D) 4. (F) (G) (H) (J)

Probability

The probability is the *chance* that something will happen. Probability is expressed as a number between 0 and 1.



Don't Forget!

Test Tip!

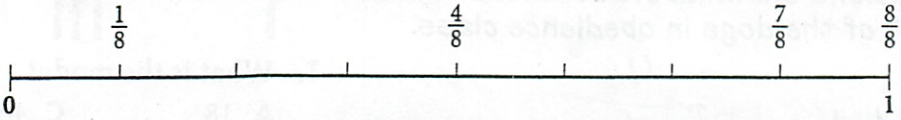
Simple fractions like

$\frac{1}{2}$ and $\frac{3}{4}$

represent quantities that are more than zero, but less than one whole.

A

DIRECTIONS: Study the number line. Check the box that describes each probability.



Probability	Never	Little Chance	Fifty-Fifty	Probably Will	Sure Thing
$\frac{1}{8}$		✓			
$\frac{7}{8}$				✓	
0	✓				
$\frac{4}{8}$			✓		
1					✓

B

DIRECTIONS: Use the spinner for activities B and C. Check the box to tell about the probability and how it would be expressed.

Outcome *Spinning a...*	Never	Sure Thing	Might Happen	Would Be Expressed As . . .
1	✓			☒0 ☐1 ☐Fraction
3			✓	☐0 ☐1 ☒Fraction
Number *greater than 3*			✓	☐0 ☐1 ☒Fraction
Number *between 1 & 5*		✓		☐0 ☒1 ☐Fraction

C

DIRECTIONS: Spinning a 2 *might happen*. To find the exact probability:

- Count the times the outcome appears. Use this number as your numerator. → 1
- Count the *total number* of possible outcomes. Use this number as your denominator. → 3
- *Reduce the fraction if necessary.*

$\frac{1}{3}$

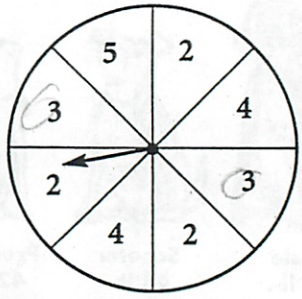
Try it!

Find the exact probability of spinning a...	
4 $\frac{1}{3}$	2 or a 4 $\frac{2}{3}$
odd number $\frac{2}{3}$	prime number $\frac{2}{3}$

Practice Test:

Fill in the circle.

Use this spinner to answer questions 1-3.



1 What is the probability of spinning a 3?

A $\frac{1}{3}$ C $\frac{1}{6}$

(B) $\frac{1}{4}$ D $\frac{1}{2}$

2 What is the probability of spinning a number greater than 1?

F 0 H $\frac{1}{4}$

G $\frac{3}{8}$ (J) 1

3 What is the probability of spinning a 6?

(A) 0 C $\frac{1}{6}$

B $\frac{3}{4}$ D 1

1. (A)(B)(C)(D) 2. (F)(G)(H)(J) 3. (A)(B)(C)(D)

Patterns, Functions, Algebra: Mixed Skills

- To solve a *number pattern*, find two numbers in a row.
- Ask yourself, "How would I get from one number to the other?"
- Would I add, subtract, multiply, or divide–and by how much?"

2, 6, 18, ___, 162

To get from 2 to 6 you could add 4 or multiply by 3. Which is it?

Test Tip!

Wanted: Problem Solver

In a *function* the numbers are related to each other according to a rule. Sometimes you have to figure out the rule.

A

DIRECTIONS: Solve each number pattern. Fill in the blanks.

1. Subtract three.
   42 39 36 33 30 27 24

2. Multiply by 2.
   1 2 4 8 16 32 64

3. ÷ 2 by two.
   320 160 80 40 20 10 5

4. Multiply by two, add one.
   2 5 11 23 47 95 191

5. Multiply by two, subtract 1.
   2 3 5 9 17 33 65

6. Divide by 10.
   1000 100 10 1 .1 .01 .001

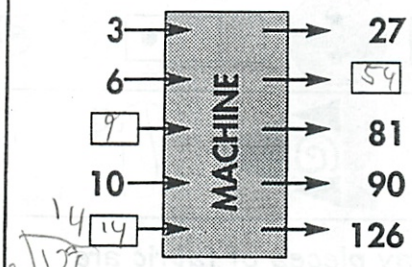
7. Add $\frac{1}{2}$.
   2 $2\frac{1}{2}$ 7 $9\frac{1}{2}$ 12 $14\frac{1}{2}$ 17

8. − 0.3
   12 11.7 11.4 11.1 10.9 10.6 10.3

B

DIRECTIONS: Figure out the "mystery rule" for functions 1-5. Fill in the answers.

1.



This machine multiplies by 9.

2.

A	B
12	3
20	5
100	25
400	100

Write the rule: ÷ 4

3.

24 ÷ 4 = 6

□ ÷ 3 = 8

□ × 2 = 48

(24 − 6) ÷ 3 = 6

What number goes in the □? 24

4.

3 ← 0 → 0

4 ← 1 → 3

5 ← 2 → 6

6 ← 3 → 9

Do one more: 7 ← 4 → 12

5.

9	3	18
4	2	8
1	1	2
25		50

Do one more: | | | |

Practice Test: Fill in the circle of each correct answer.

1 Which number is missing from the number pattern?

14, ___, 11, 9.5, 8

A 13.5
B 12.9
C 12.5
D 11.9

2 Which sequence follows the rules?

Rules
❶ Double the number.
❷ Then subtract 2.

F 6, 14, 30, 62
G 3, 4, 6, 10
H 2, 4, 8, 16
J 2, 0, −2, −4

Skill: Patterns, Functions, Algebra: Missing Element; Number Pattern; Function

1. A B C D 2. F G H J

Patterns: Geometric Patterns

You have to slow down to figure out geometric patterns!

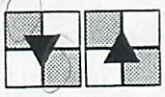
Look carefully at each element in the pattern.

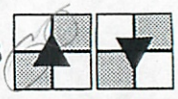
Ask yourself, "What changes?" Use the answer to continue the pattern.

Test Tip!

Look Closely!

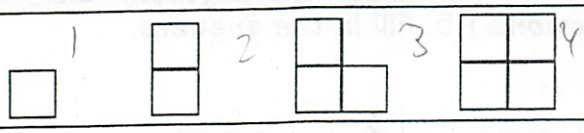
At first glance, designs **A** and **B** may look alike, but they are not the same!

A 

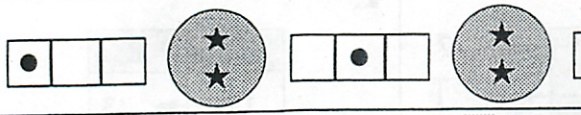
B 

A

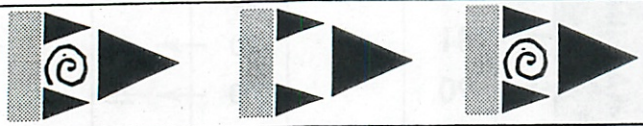
DIRECTIONS: Practice seeing patterns. Draw the next three elements in each sequence. Then answer the questions.

1. 

How many squares total? 28

2. 

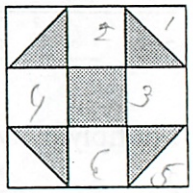
How many stars total? 8

3. 

How many triangles total? 18

B

DIRECTIONS: White and gray pieces of fabric are used to create quilt blocks like the one shown here. Circle the correct answer. Draw if necessary.

Quilt Block 

HARD:

1. If the finished quilt contains 20 quilt blocks, how many white square pieces of fabric will there be?
(Think: How many white squares are in one quilt block?)

A 4 B 5 C 20 D 80

HARDER:

2. If the finished quilt contains 100 square pieces of fabric, how many of those square pieces are white?
(Think: What is the fraction of white squares in one quilt block?)

F $\frac{1}{5}$ G $\frac{4}{5}$ H 20 J 80

EVEN HARDER:

3. If the finished quilt contains 100 square pieces of fabric, how many triangles are there?
(Think: What is the ratio of squares to triangles in one quilt block?)

A $\frac{5}{8}$ B 20 C 60 D 160

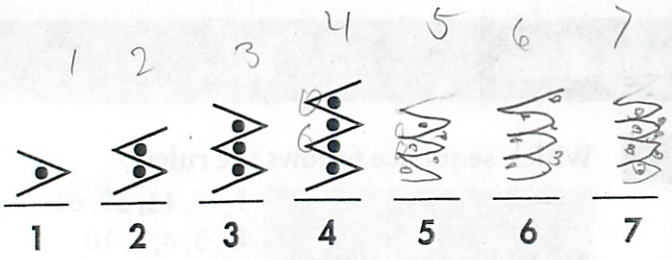
HARDEST:

4. If each quilt block measures 12" × 12", how many square inches of gray fabric are needed for each quilt block?
(Think: What is the fraction of gray fabric in each quilt block?)

F $\frac{1}{3}$ G 4 H 48 J 96

Practice Test: Fill in the circle of each correct answer.

1



How many total dots will there be if you continue the pattern to include seven elements?

A 7 B 8 C 28 D 35

2 Sally wanted to make some glass window ornaments like the one below. If she has 50 black stones, how many dried flowers does she need?

F 18 H 36
G 24 J 42

BONUS: How many more black stones must she buy to make one additional window ornament? *(The answer is not 2.)* 6

1. A B C D 2. F G H J

Problem Solving and Reasoning: Mixed Skills

Test Tip!

Think About It!

- The information given in a word problem cannot be used to answer *every question* in the world.
- Look back to see if you are given all the information you need to answer a question.

Stay Focused!

- Evaluate the answer choices *one at a time.*
- If you... ☑ get overloaded or ☑ can't remember the question

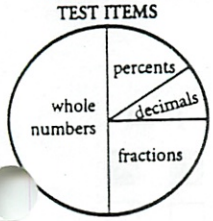
...go back and read the question again!

A DIRECTIONS: Can the question be answered? Mark ☑ for yes or ☒ for no.

28

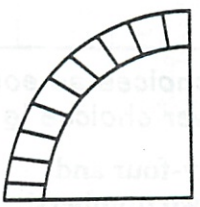
1. Farmer Wheeler has 30 cows. Each day, he gets 2 buckets of milk from each cow.
   - ☒ How many gallons of milk does each bucket hold?
   - ☑ Altogether, how many buckets of milk does he get each day?

2. FINAL EXAM
   PROPORTION OF TEST ITEMS



   On the exam, the teacher decided to replace half of the whole number items with fraction items.
   - ☒ How many items did the teacher include on the test?
   - ☑ What would the new graph look like?

3. Pat had 6 red marbles, 14 green marbles, and 8 blue marbles. Then he traded half of his green marbles for red marbles.
   - ☐ What fraction of his marbles are red?
   - ☒ If Pat trades 2 more marbles, how many green marbles will he have?

4. 

   The art teacher will cut paper plates into parts as shown. She will give three parts to each child.
   - ☒ How many paper plates must she cut altogether?
   - ☑ What fraction of a whole plate will each child receive?

B DIRECTIONS: For each word problem, write two questions that *could be* answered.

1. At 6:30 A.M. the temperature was 42°F. The temperature rose 6°F each hour after that.
   - ☑ If there is 6 hrs. What is the temp now.
   - ☑ What time was the temp 42°F

2. A fruit bat can fly 16 miles per hour. A hummingbird can fly 4 times as fast.
   - ☑ How fast doest a h-bird fly?
   - ☑ If a f-bird flys 32 miles; how long will that take a h-bird

3. Graham has 12 rolls of nickels. Each roll holds 40 nickels.
   - ☑ How much money does he have
   - ☑ How many nickles does he have

4. Bananas were on sale for 15¢ each. Rafael spent $2.70 to buy enough bananas to make three pies.
   - ☑ How many bananas does he buy.
   - ☑ How many banas per pie

Practice Test: Fill in the circle of the question that could be answered.

1 Abbas bought 4 twelve-ounce cans of tomatoes and a box of spaghetti. The spaghetti cost $1.15. He received $5.95 as change from a 10-dollar bill. He paid 30¢ in sales tax

- A How many quarters did Abbas receive?
- (B) How much did each can of tomatoes cost?
- C How many tomatoes were in each can?
- D How much did the box of spaghetti weigh?

1. A (B) C D

Problem Solving and Reasoning: Logic

- Some problems show a lot of words.
- Some problems show unusual diagrams or unfamiliar ideas.

STICK WITH IT!
(Most times you'll find it's not as hard as it looks.)

Slow Down and Think!

Test Tip!

No matter how smart you are, these problems require:

- ☑ patience
- ☑ organization
- ☑ reasoning
- ☑ time

A

DIRECTIONS: Use the clues to eliminate possibilities and order the girls from tallest to shortest. Show your reasoning on the grid by writing "No." The first one is done for you.

CLUES

1. Lulu is not the tallest.
2. Madge and Katy are both taller than Sara.
3. Lulu is three inches taller than Katy and two inches shorter than Madge.

TALLEST ← → SHORTEST

	1	2	3	4
Lulu	No	No	Yes	No
Sara	Yes	No	No	No
Madge	No	Yes	No	No
Katy	No	No	No	Yes

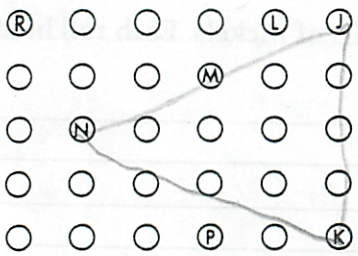
Who's Who?

Sara Name | Madge Name | Lulu Name | Katy Name

B

DIRECTIONS: Use the answer choices as sources of information. You know that one of the answer choices is correct. Circle your answer.

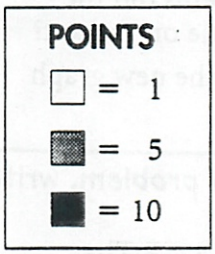
1. The product of two numbers is twenty-four and their difference is five. What are the two numbers?
   - A 6 and 4
   - B 12 and 2
   - C 8 and 3
   - D 12 and 7

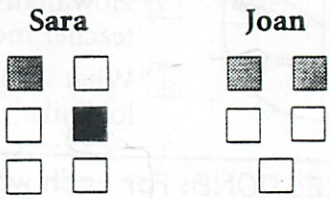
2. 

A rubber band stretched around which three pegs would not produce a right triangle?

F Ⓛ Ⓙ Ⓚ H Ⓚ Ⓙ Ⓡ

G Ⓙ Ⓝ Ⓚ J Ⓙ Ⓟ Ⓚ

3. 



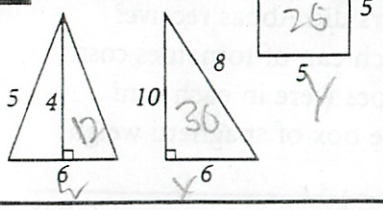
19 - 5 + 2 = 16 13 + 5 - 2 = 16

Which blocks could the girls swap to give them the same number of points?

- A Sara gives Joan ▪, Joan gives Sara □
- B Sara gives Joan ■, Joan gives Sara ▪
- C Sara gives Joan ▪, Joan gives Sara □□
- D Sara gives Joan □□, Joan gives Sara ▪

Practice Test: Fill in the circle of the correct answer.

1



The area in square units of shape W is less than half the area of shape X. The area of shape Y is the greatest. Which identifies the shapes correctly?

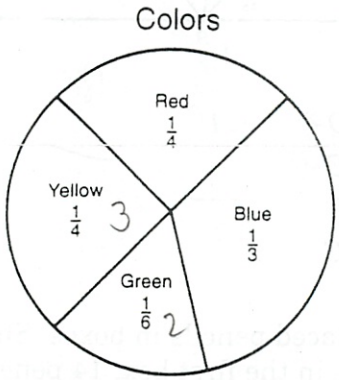
- A *W* right triangle, *X* isosceles triangle, *Y* square
- B *W* right triangle, *X* square, *Y* isosceles triangle
- C *W* isosceles triangle, *X* square, *Y* right triangle
- D *W* isosceles triangle, *X* right triangle, *Y* square

1. Ⓐ Ⓑ Ⓒ Ⓓ

Lesson 1

Part 1 Data Interpretation

Ira asked 12 of his classmates to name their favorite color. He recorded the results in a circle graph. Use the graph to answer questions 1 through 3.



12

1. How many students said red was their favorite color?

   Ⓐ 3
   Ⓑ 4
   Ⓒ 6
   Ⓓ 10

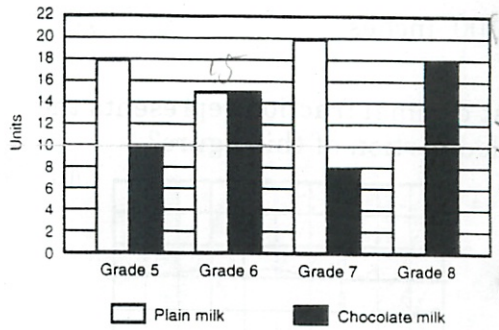
2. How many fewer students said that green was their favorite color than said that yellow was their favorite color?

   Ⓐ 2
   Ⓑ 1
   Ⓒ 4
   Ⓓ 6

3. Which color did most of Ira's classmates prefer?

   Ⓐ blue
   Ⓑ red
   Ⓒ yellow
   Ⓓ green

The double bar graph represents the amount of chocolate milk and the amount of plain milk bought by fifth, sixth, seventh, and eighth graders on one day of the week. Use this graph to answer questions 4 through 6.



4. Which grade bought the most chocolate milk?

   Ⓐ grade 5
   Ⓑ grade 6
   Ⓒ grade 7
   Ⓓ grade 8

5. Which grade had the biggest difference between the amount of chocolate milk bought and the amount of plain milk bought?

   Ⓐ grade 5
   Ⓑ grade 6
   Ⓒ grade 7
   Ⓓ grade 8

6. 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

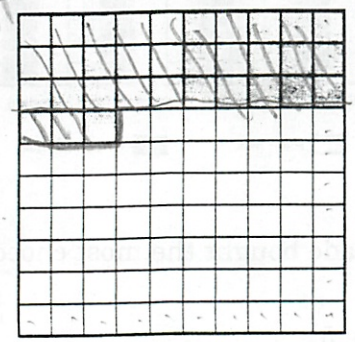
Prime + Comp
X10, ÷10
Factors
Multiples
Circles
X and ÷
Negitive #s
Measurment
Edments
Circle facts
$A = \pi r^2$
$C = \pi d$
$d = 2r$
$r = \frac{1}{2} d$
$\pi = 3.14$ or $\frac{22}{7}$

Part 2 Practice with Mixed Problems

7. Lana has a square picture that has one side with a length of 10 inches. What is the perimeter of this picture?

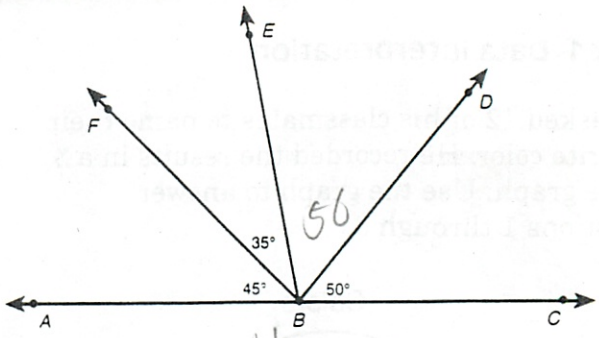
   Ⓐ 10 inches
   Ⓑ 20 inches
   Ⓒ 40 inches
   Ⓓ 100 inches

8. What decimal fraction represents the shaded portion of this figure?



   Ⓐ 0.3
   Ⓑ 0.33
   Ⓒ 0.333
   Ⓓ 0.3333

9. Which angle has the greatest measure?



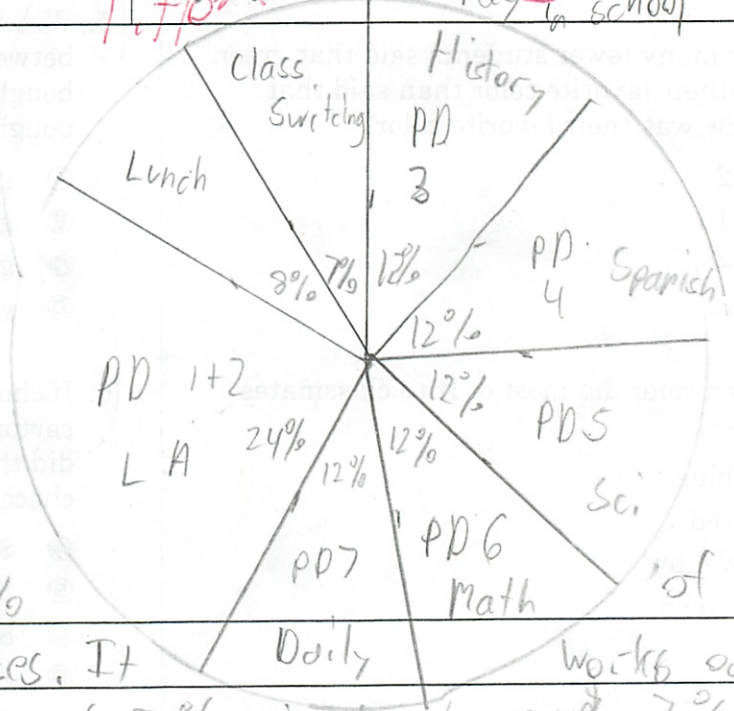
   Ⓐ ∠FBD
   Ⓑ ∠ABE
   Ⓒ ∠ABD
   Ⓓ ∠DBC

10. 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
   Ⓑ 42
   Ⓒ 46
   Ⓓ 18

Part 3 Open-ended Problem

11. Draw a circle graph with fractional parts to represent how you spend your school day. Explain how you determined each fractional part.



Explanation: I spend 84% of my day in classes. It works out to 12% per period. I spend 8% in lunch and 7% for switching classes.

STOP

Lesson 2

Part 1 Numeration

1. Which of these expresses $4 \times 4 \times 4 \times 4 \times 4$ in exponential notation?

   Ⓐ 4^5

   Ⓑ 5^4

   Ⓒ $4^2 \times 4^4$

   Ⓓ 5×4

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

   Ⓐ $\frac{2}{9}$

   Ⓑ $\frac{1}{4}$

   Ⓒ $\frac{2}{3}$

   Ⓓ $\frac{7}{12}$

3. The closest estimate of $18.16 \div 5.92$ is

   Ⓐ 5.

   Ⓑ 2.

   Ⓒ 4.

   Ⓓ 3.

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

   Ⓐ $\frac{3}{8}$

   Ⓑ 37.5%

   Ⓒ $\frac{1}{4}$

   Ⓓ $\frac{375}{1,000}$

5. Which of the following decimals can be written as twenty-three and four thousandths?

   Ⓐ 23.4

   Ⓑ 2.34

   Ⓒ 23.04

   Ⓓ 23.004

6. Which of these is another way to write 53 million 23 thousand four hundred thirty-two?

   Ⓐ 5,323,432

   Ⓑ 53,023,432

   Ⓒ 53,230,432

   Ⓓ 43,203,432

Go on to next page

Part 2 Practice with Mixed Problems

7. 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?

   Ⓐ $\frac{8}{25}$

   Ⓑ $\frac{12}{25}$

   Ⓒ $\frac{1}{5}$

   Ⓓ $\frac{17}{25}$

8. A classroom has 5 desks per row plus 2 extra desks in the corner. In order to determine the maximum number of students who can sit at desks in the classroom, what other information is needed?

   Ⓐ the number of rows in the classroom

   Ⓑ the number of desks per row

   Ⓒ how many students are in the class

   Ⓓ how many empty desks there are each day

9. Which of the following are **not** prime numbers?

   Ⓐ 2, 5, 7

   Ⓑ 3, 11, 13

   Ⓒ 5, 17, 19

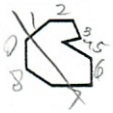
   Ⓓ 6, 21, 27

10. Which of the figures below is an octagon?

    Ⓐ 

    Ⓑ 

    Ⓒ 

    Ⓓ 

Part 3 Open-ended Problem

11. Explain the difference between a prime number and a composite number. Give examples of prime numbers and composite numbers and relate the numbers to your explanation.

Prime numbers: 2, 3, 5 Composite numbers: 4, 6, 8

Explanation: A prime # is a number that can only be devided by 1 and the number itself. Compasite Can be devided by other numbers like 6 is 1, 2, 3, 6 instead of 1, 3 for cometing prime.

Lesson 3

Part 1 Measurement

1. Which of these is another way to write 36 ounces?

   Ⓐ 3 pounds
   Ⓑ $2\frac{1}{4}$ pounds
   Ⓒ $1\frac{1}{2}$ pounds
   Ⓓ $2\frac{3}{8}$ pounds

2. The area of a rectangle is 24 cm^2. If the length of the rectangle is 8 cm, what is the width of the rectangle?

   Ⓐ 6 cm
   Ⓑ 4 cm
   Ⓒ 16 cm
   Ⓓ 3 cm

3. Maria leaves her house each morning at the same time. It takes her 10 minutes to walk to the bus stop, where she must wait 7 minutes for the bus to arrive. The bus ride to school takes 35 minutes. Maria arrives at school at 8:19 A.M. At what time does Maria leave the house in the morning?

   Ⓐ 7:30 A.M.
   Ⓑ 7:19 A.M.
   Ⓒ 7:27 A.M.
   Ⓓ 7:34 A.M.

4. The area of a circle is 154 $inches^2$. Which of these is the length of the diameter?

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

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

5. Which of these is another way to write $4\frac{2}{3}$ feet?

   Ⓐ 47 inches
   Ⓑ 28 inches
   Ⓒ 56 inches
   Ⓓ 11 $inches^2$

6. 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.

Go on to next page

Part 2 Practice with Mixed Problems

As Bill is driving along the highway, he sees the following road sign. Use the information on the sign to answer questions 7 and 8.

Homeville	Exit $\frac{1}{2}$ mile
Smithtown	Exit $\frac{2}{3}$ mile
Greenson	Exit $\frac{5}{6}$ mile
Briar City	Exit 1 mile
Carson	Exit $1\frac{1}{6}$ miles

7. How far is it from the Smithtown exit to the Greenson exit?

Ⓐ $\frac{1}{3}$ mile

Ⓑ $\frac{1}{6}$ mile

Ⓒ $\frac{2}{3}$ mile

Ⓓ $\frac{1}{4}$ mile

8. Which exit is ~~more than~~ twice the distance of the Homeville exit?

Ⓐ Smithtown

Ⓑ Greenson

Ⓒ Briar City

Ⓓ Carson

9. Which of these numbers will **not** be 2.6 when rounded to the nearest tenth?

Ⓐ 2.63

Ⓑ 2.58

Ⓒ 2.53

Ⓓ 2.64

10. Carmen purchased 28.5 feet of green rope to make 3 decorative leashes for her dogs. She wants to cut the rope into equal pieces. What will the length of each piece be?

Ⓐ $9\frac{3}{8}$ ft

Ⓑ $8\frac{1}{4}$ ft

Ⓒ $7\frac{2}{3}$ ft

Ⓓ $9\frac{1}{2}$ ft

9,5
3|28,5 Not This

Part 3 Open-ended Problem

11. Complete the table for squares with sides having the length given. Explain the pattern you find.

side length	area
1 in.	1 in²
2 in.	4 in²
4 in.	16 in²
8 in.	64 in²

4×4=16 in²
8×8=64

Units

Multiple

Explanation: If you double the side lenght, the area ~~doubles~~ quadrouples (4×)

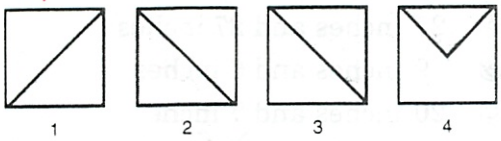
Lesson 4

Part 1 Geometry

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

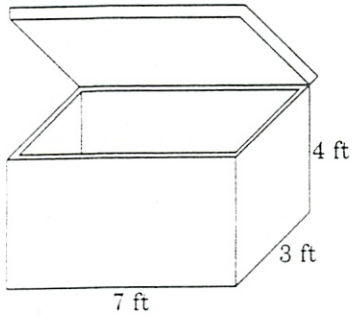
   Ⓐ 14 inches
   Ⓑ 48 inches
   Ⓒ 7 inches
   Ⓓ 3 inches

2. Which pair of figures below shows two shaded shapes that are **not** congruent?



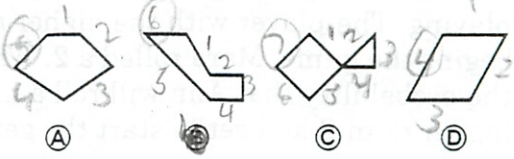
   Ⓐ figures 1 and 2
   Ⓑ figures 2 and 3
   Ⓒ figures 3 and 4
   Ⓓ figures 1 and 3

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

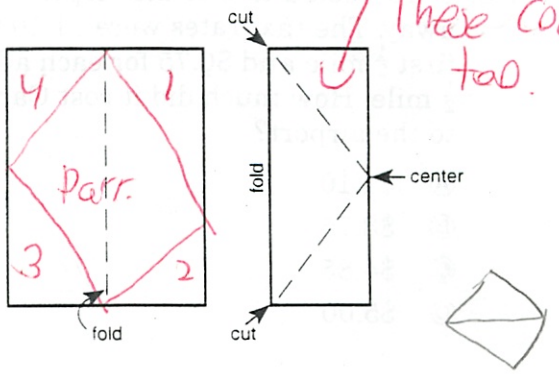


   Ⓐ 14 ft^3
   Ⓑ 25 ft^3
   Ⓒ 56 ft^3
   Ⓓ 84 ft^3

4. Which of these figures is a hexagon?

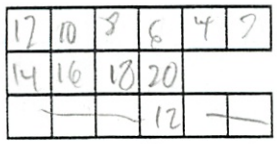


5. Johann took a rectangular piece of paper, folded it in half lengthwise and made the indicated cuts. After unfolding the paper, what shapes did he get?



   Ⓐ 4 triangles
   Ⓑ 4 triangles and 1 parallelogram
   Ⓒ 5 triangles
   Ⓓ 3 triangles and 1 rectangle

6. How many of the smaller figure are needed to cover the larger figure?



   Ⓐ 16
   Ⓑ 32
   Ⓒ 36
   Ⓓ 64

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Part 2 Practice with Mixed Problems

7. 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?

Ⓐ $\frac{1}{3}$ (1 watch)

Ⓑ $\frac{2}{3}$

Ⓒ $\frac{5}{5}$

Ⓓ $\frac{1}{2}$

8. Carol took a taxi to the airport 3 miles away. The taxi rates were \$1.10 for the first $\frac{1}{2}$ mile and \$0.75 for each additional $\frac{1}{2}$ mile. How much did it cost Carol to ride to the airport?

Ⓐ \$1.10

Ⓑ \$3.75

Ⓒ \$4.85

Ⓓ \$5.00

9. What is the next number in the pattern?

1, 2, 3, 5, 8, 13, ___

Ⓐ 14

Ⓑ 15

Ⓒ 20

Ⓓ 21

Prime #s

Add the 2 previous #s

pattern

10. A rectangle has an area of 54 inches^2. Which of these measurements could be the length and width of the rectangle?

Ⓐ 27 inches and 27 inches

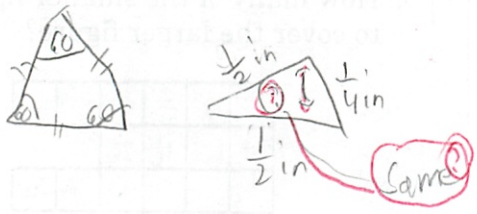
Ⓑ 9 inches and 6 inches

Ⓒ 20 inches and 7 inches

Ⓓ 8 inches and 7 inches

Part 3 Open-ended Problem

11. Construct an equilateral triangle. Construct an isosceles triangle. How are the two triangles alike? How are they different?



Alike: triangles, 3 sides + angles, 2 sides same length, angles measure 180°, a = base × height × ½

Different: sizes, measures, lengths different, names

Lesson 5

Part 1 Number Theory

1. 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 ← actually it is 5
   Ⓑ $0.05
   Ⓒ $0.25 correct
   Ⓓ $0.30

   0: .24
   6 - .25

2. Dante looked at the books on his bookshelf and noticed that $\frac{4}{9}$ of his books were sports books, $\frac{1}{3}$ were comic books, $\frac{1}{6}$ were history books, and the rest were car books. Dante has the least of which type of book?

   Ⓐ car books
   Ⓑ comic books
   Ⓒ history books
   Ⓓ sports books

   $\frac{4}{9} + \frac{1}{2}$ or $\frac{4.5}{9}$ $\frac{8.5}{9}$ everything but car
   $\frac{1}{3}$ $\frac{2}{6}$
   $\frac{1}{6}$
   Read carefully
   Original work $\frac{3}{6}$ or $\frac{1}{2}$

3. What fraction could be subtracted from 1 to get a difference less than $\frac{1}{2}$?

   Ⓐ $\frac{1}{2}$
   Ⓑ $\frac{2}{3}$
   Ⓒ $\frac{2}{5}$
   Ⓓ $\frac{1}{4}$

4. What is the relationship between the numbers in the box?

   1, 3, 9, 27

   Ⓐ They are all composite numbers.
   Ⓑ They are all prime numbers.
   Ⓒ They are all factors of 27. Can Divide?
   Ⓓ They are all multiples of 9. Can Multiply?

   Look up

5. 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

   1.06
   90
   95.40

6. Ari walks his dog every day for $\frac{2}{5}$ hour. How many hours does he spend walking his dog in 10 days?

   Ⓐ 5 hours
   Ⓑ 4 hours
   Ⓒ 10 hours
   Ⓓ 6 hours

   $\frac{2}{5}$ $\frac{2}{5}$ $\frac{2}{5}$ = $\frac{20}{5}$ → 4

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Part 2 Practice with Mixed Problems

The following table represents the number of pounds of chicken, beef, fish, and turkey eaten per person in the United States over a three-year period. Use this table to answer questions 7 and 8.

Food	Year 1	Year 2	Year 3
chicken	43.2	44.5	47.0
beef	69.2	68.2	65.0
fish	15.5	15.0	15.7
turkey	12.0	12.6	13.5

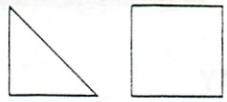
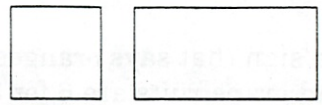
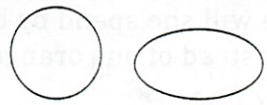
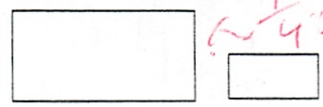
7. Which type of food showed a trend of decreasing use over the three-year period?

Ⓐ chicken
Ⓑ beef
Ⓒ fish
Ⓓ turkey

8. Which food had the greatest increase in use from year 1 to year 3?

Ⓐ chicken
Ⓑ beef
Ⓒ fish
Ⓓ turkey

9. Which two figures are similar?

Ⓐ 
Ⓑ 
Ⓒ 
Ⓓ 

10. James left his home at 11:15 A.M. and returned 127 minutes later. At what time did James return home?

Ⓐ 1:22 P.M.
Ⓑ 12:42 P.M.
Ⓒ 1:15 P.M.
Ⓓ 12:32 P.M.

Part 3 Open-ended Problem

11. If hot dogs come in packages of 10 and hot dog buns come in packages of 8, how many packages of hot dogs and buns are needed so that each person in your class could have 1 hot dog on a bun? If everyone in the class has 2 hot dogs on buns, does that exactly double the number of packages that are needed? Explain.

Answer: _____

Explanation: _____

Lesson 6

Part 1 Algebra

1. Four laps around the running track equals 1 mile. Jane runs 11 laps. Which proportion shows how to find the number of miles Jane runs?

Ⓐ $\frac{4}{x} = \frac{11}{1}$
Ⓑ $\frac{4}{1} = \frac{11}{x}$
Ⓒ $\frac{x}{4} = \frac{11}{1}$
Ⓓ $\frac{x}{11} = \frac{4}{1}$

2. If $n = 4$, what number will replace the box to make the equation true?

$(\square \times n) + n = 28$

Ⓐ 39
Ⓑ 4
Ⓒ 65
Ⓓ 6

3. What is the greatest common factor of 12, 18, and 24?

Ⓐ 2
Ⓑ 3
Ⓒ 6
Ⓓ 12

4. A rule is being used to assign numbers in column A to numbers in column B. Study the numbers and determine which of the following could be the rule.

Column A	Column B
+5	+9
+2	+6
-1	+3
-4	0

Ⓐ subtract +4
Ⓑ add +2
Ⓒ add +1
Ⓓ subtract -4

5. Aki has 6 friends. For each of her friends, she buys 5 bracelets. Which of the following equations represents the total number of bracelets Aki bought?

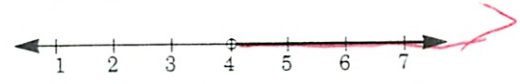
Ⓐ $5 \times n = 30$
Ⓑ $n \times 6 = 30$
Ⓒ $5 \times 6 = n$
Ⓓ $n \times 5 = n$

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

Ⓐ 

Ⓑ 

Ⓒ 

Ⓓ 

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Part 2 Practice with Mixed Problems

7. Which of these is another way to write 40,000,000 + 900,000 + 13?

Ⓐ 40,900,013
Ⓑ 49,000,013
Ⓒ 409,013
Ⓓ 40,090,013

40,900,013

8. The Kennedy Middle School staged a musical comedy that ran for four performances. The attendance at each performance was 322, 430, 453, and 395. What was the average (mean) attendance per performance?

Ⓐ 1,600
Ⓑ 510
Ⓒ 400
Ⓓ 385

322
430
453
395
1600
4
400

9. 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?

Ⓐ $\frac{3}{5}$
Ⓑ $\frac{2}{3}$
Ⓒ $\frac{1}{4}$
Ⓓ $\frac{2}{5}$

$\frac{16}{40} \rightarrow \frac{8}{20} \rightarrow \frac{4}{10} \rightarrow \frac{2}{5}$

24
16
40

10. 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

S T J
W E

$\frac{2}{3} \frac{2}{3} \frac{2}{3}$ $\frac{6}{3} = 2$
x3

Part 3 Open-ended Problem

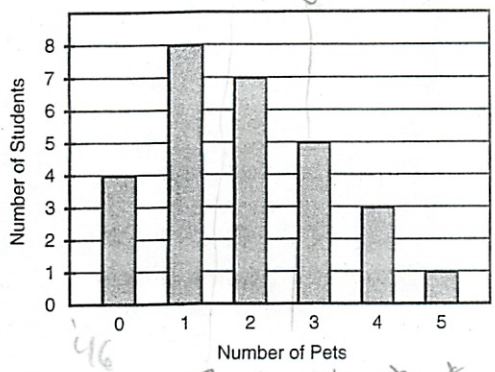
11. Write a story problem that is represented by the equation $n - 7 = 29$.

After I give Jack 7 laptops, I now have 29 of them. How many do I have in the beginning.

Lesson 7

Part 1 Data Interpretation

The following bar graph represents the number of pets owned by each student in Karen's class. Use the graph to answer questions 1 through 3.



1. How many pets are represented by the graph?

   Ⓐ 54
   Ⓑ 58
   Ⓒ 32
   Ⓓ 28

2. How many students have more than 2 pets?

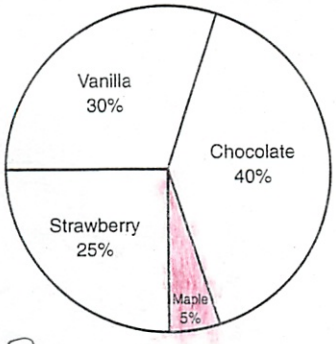
   Ⓐ 5
   Ⓑ 3
   Ⓒ 9
   Ⓓ 1

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

   Ⓐ $\frac{1}{7}$
   Ⓑ $\frac{1}{4}$
   Ⓒ $\frac{1}{2}$
   Ⓓ $\frac{1}{28}$

This circle graph shows the favorite ice-cream flavors of 20 seventh-grade students. Use the graph to answer questions 4 through 6.

Favorite Ice-Cream Flavors (20 Students)



4. How many students prefer vanilla?

   Ⓐ 3
   Ⓑ 6
   Ⓒ 7
   Ⓓ 10

5. Chocolate is not the favorite flavor of how many students?

   Ⓐ 12
   Ⓑ 4
   Ⓒ 6
   Ⓓ 8

6. How many more students prefer chocolate than prefer strawberry?

   Ⓐ 15
   Ⓑ 8
   Ⓒ 3
   Ⓓ 5

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Part 2 Practice with Mixed Problems

7. Jerry takes 40 minutes to read 25 pages in a book. He wants to read a book containing 200 pages. Which of the following proportions could be used to determine how many minutes it will take Jerry to read this book?

   Ⓐ $\frac{40}{n} = \frac{200}{25}$

   Ⓑ $\frac{n}{40} = \frac{25}{200}$

   Ⓒ $\frac{40}{25} = \frac{n}{200}$

   Ⓓ $\frac{200}{40} = \frac{25}{n}$

8. Which statement is true about the relationship between the radius of a given circle and the diameter of that same circle?

   Ⓐ The radius is twice the diameter.

   Ⓑ The diameter is $\frac{1}{2}$ the radius.

   Ⓒ The diameter is twice the radius.

   Ⓓ The radius is $\frac{1}{3}$ the diameter.

9. What is the minimum number of triangles it would take to cover a square?

   Ⓐ 4

   Ⓑ 3

   Ⓒ 2

   Ⓓ 1

10. Kelly is selling magazines for her school. The school gets to keep 8% of the money from the magazine sales. If Kelly sells $300 worth of magazines, how much money does the school get to keep?

    Ⓐ $ 8.00

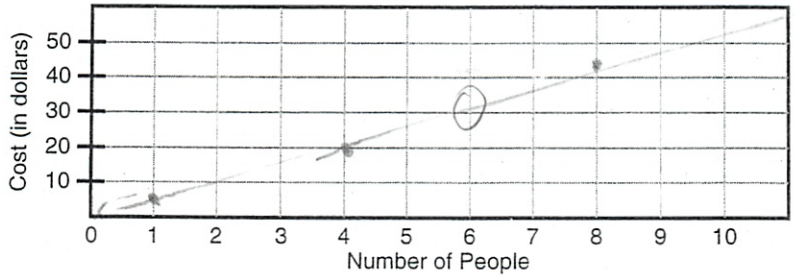
    Ⓑ $12.00

    Ⓒ $16.00

    Ⓓ $24.00

Part 3 Open-ended Problem

11. Make a line graph of the following. It costs Nori $4.00 to eat lunch alone at a nearby restaurant. When she takes 3 friends out to lunch at the same restaurant, Nori pays $20.00 for the 4 of them. When Nori goes out to lunch with her entire family at the same restaurant, the bill is $42.00 for all 8 people.



Use the graph to estimate how much it would cost for 6 people to eat lunch at that restaurant.

Estimation: About $30 it would cost for 6 people

STOP

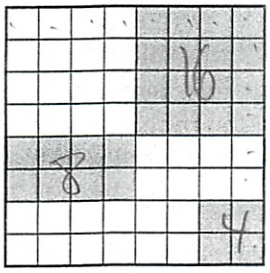
Lesson 8

Part 1 Numeration

1. Which of these decimals is thirty-five thousandths?

   Ⓐ 35,000.0
   Ⓑ 0.0035
   Ⓒ 0.035
   Ⓓ 0.35

2. What fraction of the figure is shaded?



   Ⓐ $\frac{3}{4}$
   Ⓑ $\frac{1}{2}$
   Ⓒ $\frac{5}{8}$
   Ⓓ $\frac{7}{16}$

3. The closest estimate of 12.86 + 15.97 is

   Ⓐ 27.
   Ⓑ 29.
   Ⓒ 30.
   Ⓓ 31.

4. Which of these decimals is **not** between 0.512 and 0.545?

   Ⓐ 0.52
   Ⓑ 0.531
   Ⓒ 0.55
   Ⓓ 0.517

5. Which number is less than 1 but greater than $^{-}4$?

   Ⓐ 2
   Ⓑ $^{-}3$
   Ⓒ $^{-}5$
   Ⓓ 3

6. Which of these is another way to write $\frac{3}{4}$?

   Ⓐ 0.34
   Ⓑ $\frac{4}{3}$
   Ⓒ 0.75
   Ⓓ 3.4

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Part 2 Practice with Mixed Problems

Use the information in the following table to answer questions 7 and 8.

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

375
375
750

7. Which car has a fuel cost more than twice that of the compact car?

Ⓐ Subcompact
Ⓑ Midsize
Ⓒ Large
Ⓓ Pick-up truck

not 2 of compact

8. 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

0.375

9. How many triangles appear in the figure below?

4 of these added

Ⓐ 6
Ⓑ 4
Ⓒ 12
Ⓓ 8

12

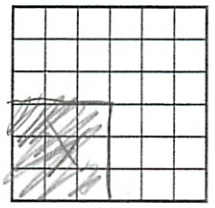
10. Hamburger patties come in packages of 8. If each student in a class of 35 has 2 hamburgers for lunch, how many packages of hamburgers will be needed?

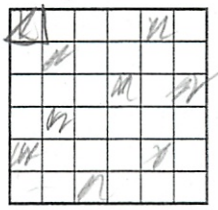
Ⓐ 6 packages
Ⓑ 7 packages
Ⓒ 8 packages
Ⓓ 9 packages

8 | 70

Part 3 Open-ended Problem

11. Use the grids below to show two different ways to shade in $\frac{1}{4}$ of a grid. Explain how you know that $\frac{1}{4}$ of each grid has been shaded in.





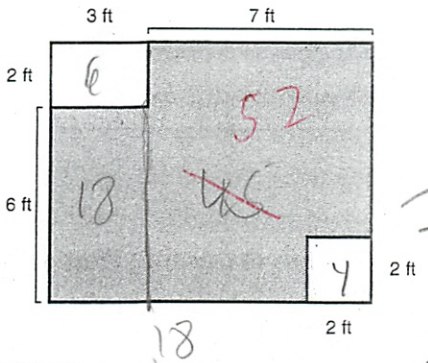
Explanation: I know that a 6×6 square has 36 spots
$\frac{1}{4}$ of 36 = 9 so, 9 spots are shaded in

STOP

Lesson 9

Part 1 Measurement

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



Ⓐ 80 ft²
Ⓑ 10 ft²
Ⓒ 70 ft²
Ⓓ 16 ft²

2. A farmer has 200 feet of fencing to enclose a square pen. What are the length and width of the pen with the largest possible perimeter?

Ⓐ 100 feet and 100 feet
Ⓑ 100 feet and 50 feet
Ⓒ 20 feet and 10 feet
Ⓓ 50 feet and 50 feet

3. The temperature was 5°F. After three hours, the temperature had fallen 9°. What was the new temperature?

Ⓐ 4°F
Ⓑ -4°F
Ⓒ -9°F
Ⓓ -5°F

4. Miguel has $1\frac{3}{4}$ hours to complete his chores before his favorite TV show comes on. He spends 53 minutes cleaning his room, 24 minutes walking the dog, and 6 minutes taking the garbage outside. How many minutes are left until the TV show begins?

Ⓐ 22 minutes
Ⓑ 17 minutes
Ⓒ 83 minutes
Ⓓ 0 minutes

5. Lian measured the length of her classroom. She recorded the number 8 but did not write down the units. Which of the following is a reasonable unit for this measurement?

Ⓐ centimeter
Ⓑ meter
Ⓒ millimeter
Ⓓ liter

6. Mike had 4 quarters, 7 dimes, 2 nickels, and 3 pennies. He paid for a candy bar with 1 quarter and 3 dimes and received 1 nickel and 2 pennies in change. How much money does he have now?

Ⓐ $1.83
Ⓑ $1.35
Ⓒ $0.55
Ⓓ $1.28

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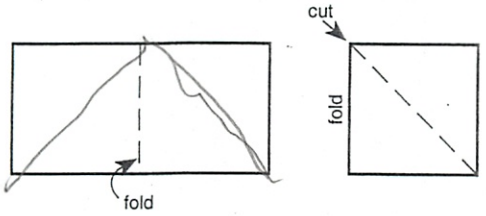
Part 2 Practice with Mixed Problems

7. If a rectangular piece of paper is folded and cut as shown below, what shapes do you get?



Ⓐ 2 triangles and 1 square
Ⓑ 3 triangles
Ⓒ 4 triangles
Ⓓ 1 triangle and 1 square

8. At the carnival, Jorge played a ring-toss game. A player gets 10 points for tossing the ring onto a peg, and 5 points if the ring hits the peg but does not land on it. If the ring misses the peg completely, the player receives no points. After 5 tosses, Jorge's score was 20 points. Which of the following statements could **not** be true?

Ⓐ Jorge missed the peg once.
Ⓑ Jorge missed the peg twice.
Ⓒ Jorge missed the peg three times.
Ⓓ Jorge never missed the peg.

9. Which statement is true about the number that will replace the box to make the number sentence true?

$\square - 4{,}127 = 4{,}064 + 936$

Ⓐ The number is less than 9,000.
Ⓑ The number is exactly 9,000.
Ⓒ The number is between 9,000 and 10,000.
Ⓓ The number is more than 10,000.

10. Which fraction is missing from the number pattern?

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

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

Part 3 Open-ended Problem

11. A square has an area of 36 cm². Give the length and the width of a rectangle with the same area. Explain how you know your measurements are reasonable.

Length and width of the rectangle: 12 x 3 cm

Explanation: I knew 36 could be devided by 12 You got 3. So 12x3 would be 36 cm²

STOP

Lesson 10

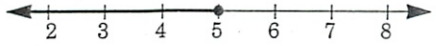
Part 1 Algebra

1. What number will replace the box to make the number sentence true?

$(8 - 5) \times 2 + (5 \times 2) = (8 \times \square)$

Ⓐ 5
Ⓑ 2
Ⓒ 16
Ⓓ 0

2. Which of these does the number line show?



Ⓐ $x \geq 6$
Ⓑ $x \leq 5$
Ⓒ $x \geq 5$
Ⓓ $x \leq 6$

3. 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

4. The number 24 is a common multiple of which set of numbers below?

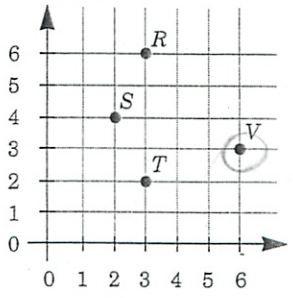
Ⓐ 6, 9, and 12
Ⓑ 2, 3, and 5
Ⓒ 3, 4, and 8
Ⓓ 6, 12, and 18

5. Using the following table of numbers, determine which rule is responsible for turning each number in column A into a number in column B.

Column A	Column B
$^{-}2$	$^{-}6$
0	0
$^{+}3$	$^{+}9$
$^{+}5$	$^{+}15$

Ⓐ subtract $^{+}4$
Ⓑ add $^{+}6$
Ⓒ multiply by 0
Ⓓ multiply by $^{+}3$

6. Which point in the figure below has the coordinates (6, 3)?



Ⓐ V
Ⓑ S
Ⓒ R
Ⓓ T

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Part 2 Practice with Mixed Problems

7. Five students calculated the average weekly allowance they receive. The average was \$5.00. When they included Martina's allowance, the average went to \$5.25. Which of these statements is true?

   Ⓐ Martina's allowance was less than \$5.00.

   Ⓑ Martina's allowance was exactly \$5.00.

   Ⓒ Martina's allowance was more than \$5.00.

   Ⓓ Martina's allowance was exactly \$1.50.

8. Which statement is most reasonable?

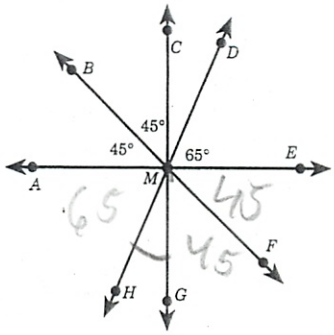
   Ⓐ A 12-year-old boy weighs about 100 grams.

   Ⓑ A car weighs about 50 kilograms.

   Ⓒ A quarter weighs about 6 grams.

   Ⓓ A newspaper weighs about 500 kilograms.

9. Four lines intersect at point M. What is the measure of $\angle HMG$?



   Ⓐ 25°

   Ⓑ 65°

   Ⓒ 30°

   Ⓓ 15°

10. During her nightly 2-hour study time, Anna spends $\frac{1}{6}$ of her time on math, $\frac{1}{4}$ of her time on social studies, $\frac{5}{12}$ of her time on spelling, and the rest of her time reading. How many minutes does Anna spend reading?

    Ⓐ 40 minutes

    Ⓑ 30 minutes

    Ⓒ 50 minutes

    Ⓓ 20 minutes

Part 3 Open-ended Problem

11. Determine a rule that could link the numbers in columns A and B in the chart below. Complete the chart. Then explain the rule.

Column A	Column B
+5	+10
+2	4
0	0
-3	-6

Explanation: The rule is multiply by 2.

STOP

PRETEST: Mathematics, Part I

DIRECTIONS: For all questions in Part I, solve each problem and fill in the circle on your answer sheet. For questions 1-16 only, mark *Not Here* if the correct answer is not given. If you finish Part I ahead of time, go back and check your answers.

1 $2\frac{1}{2} + 1\frac{2}{5} =$

A $1\frac{1}{10}$
B $2\frac{9}{10}$
C $3\frac{9}{10}$
D $3\frac{9}{20}$
E Not Here

2 $10\frac{1}{3} - 6\frac{3}{4} =$

F $3\frac{1}{7}$
G $3\frac{7}{12}$
H $3\frac{5}{12}$
J $4\frac{5}{12}$
K Not Here

3 $6\frac{1}{8} \times 4 =$

A $6\frac{1}{2}$
B $10\frac{1}{8}$
C $24\frac{1}{8}$
D 26
E Not Here

4 $4\frac{1}{4} \div 8 =$

F $\frac{17}{32}$
G $\frac{17}{12}$
H 14
J 34
K Not Here

5 $16.32 + 3.7 =$

A 16.69
B 19.102
C 19.39
D 20.02
E Not Here

6 $13.2 - 6.9 =$

F 6.3
G 7.3
H 7.7
J 12.3
K Not Here

7 $1.6 \times .3 =$

A .39
B 3.9
C .48
D 4.8
E Not Here

8 $39 \div .6 =$

F 6.5
G 33.6
H 39.3
J 65
K Not Here

9 $2 - 16 =$

A 12
B 14
C $^-14$
D $^-18$
E Not Here

10 $^-16 - 9 =$

F $^-5$
G 5
H $^-13$
J $^-25$
K Not Here

11 $^-10 \times ^-8 =$

A $^-2$
B $^-12$
C $^-18$
D $^-80$
E Not Here

GO ON

12 $-45 \div 9 =$

F -5
G 5
H -36
J 36
K Not Here

13 30% of 150 =

A 45
B 55
C 90
D 120
E Not Here

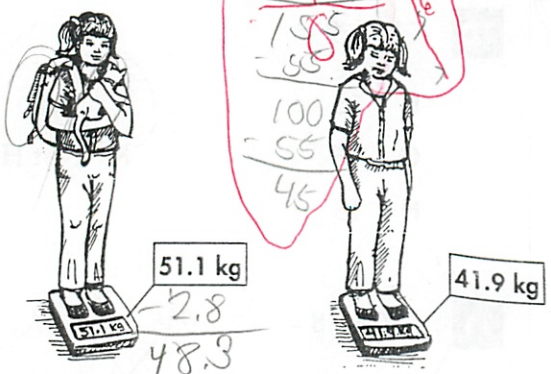
14 $13 - (4 \times 6) \div 12 =$

F 2
G 4
H 11
J 23
K Not Here

15 Corinne paid \$12.60 for $3\frac{1}{2}$ pounds of sliced ham. What was the price per pound?

A \$2.85
B \$3.15
C \$3.40
D \$3.60
E Not Here

16 If Amanda's backpack weighs 2.8 kg, how much does her cat weigh?



F 6.4 kg
G 6.6 kg
H 7.2 kg
J 7.6 kg
K Not Here

17 At 19 revolutions per minute, how many minutes will it take a gear to turn 100 revolutions?

A less than 5 minutes
B between 5 and $5\frac{1}{2}$ minutes
C between $5\frac{1}{2}$ and 6 minutes
D more than 6 minutes

18 $316.2 + 143.07 =$

The sum will show which digit in the hundredths' place?

F 0
G 2
H 7
J 9

19 $(6 \times 10^3) + (3 \times 10^1) + (8 \times 10^0)$

When the value in the box is written as a numeral, what digit appears in the hundreds' place?

A 0
B 6
C 3
D 8

20 At the Teacup Poodle Contest, prizes were awarded to the lightest poodles. Which poodle received second prize?

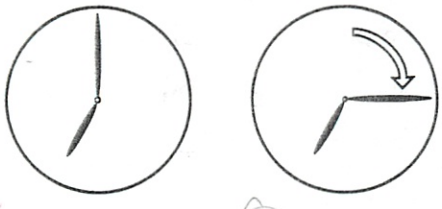
NAME	WEIGHT
Fifi	1.321 kg
Precious	1.020 kg
Mitzi	2.006 kg
Muffy	2.034 kg
Prince	1.006 kg

F Prince
G Fifi
H Precious
J Mitzi

GO ON

PRETEST: Mathematics, Part 1

21 The diagram below shows the minute hand of a clock making a quarter turn. How many quarter turns does the minute hand make from 1:00 P.M. to 3:30 P.M.?



A 6
B 8
C 10
D 12

22 Which shows three ways to write the same value?

F	$\frac{1}{4}$	.14	14%
G	.2	$\frac{1}{5}$	20%
H	$\frac{1}{8}$	1.8%	.18
J	$\frac{2}{5}$	.4	25%

23 Which best describes the numbers in the box?

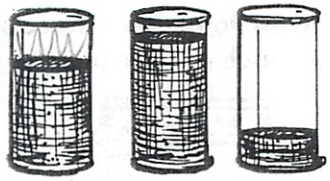
1, 2, 3, 4, 6, 12

A even numbers
B all of the factors of 24
C multiples of 12
D factors of 36

24 In a list of all whole numbers between 1 and 100, how many numbers are both even and prime?

F 1
G 2
H 17
J 50

25 If filled to the top, each cylinder holds 40 ounces of fluid. About how many ounces altogether are in these three cylinders?



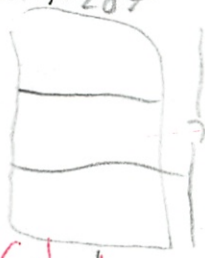
A 50 oz.
B 70 oz.
C 90 oz.
D 110 oz.

26 At 2:00 P.M., the temperature was 12°F. If the temperature dropped 5 degrees each hour, what was the temperature at 5:00 P.M.?

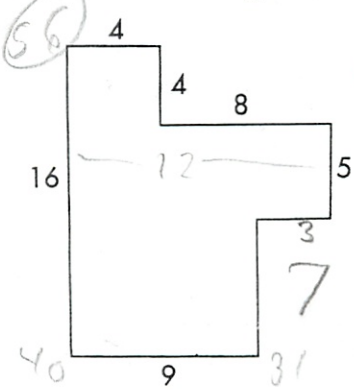
F 7°F
G −7°F
H −13°F
J −3°F

27 Roxanne bought a piece of fabric that was 48 inches wide. When cut into 3 equal pieces, each piece measured 24 inches × 48 inches. How many yards of fabric did she buy?

A 2 yds.
B $2\frac{1}{2}$ yds.
C 3 yds.
D $3\frac{1}{2}$ yds.



28 In units, what is the perimeter?



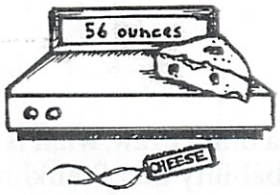
F 37
G 46
H 47
J 56

STOP

PRETEST: Mathematics, Part II

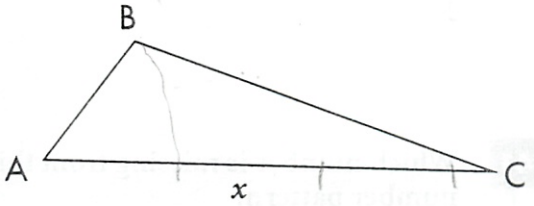
DIRECTIONS: For questions 29-50, solve each problem and fill in the circle on your answer sheet. If you finish Part II ahead of time, go back and check your answers.

29 Lenore paid $6.96 for the cheese on the scale. About how much did she pay per pound?



A $1.50
B $2.00
C $2.50
D $3.00

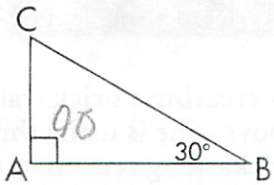
30 *Use your centimeter ruler to help answer this question.*



If x represents the length of side $\overline{AC}$ which expression could be used to represent the length of side $\overline{AB}$?

F $\frac{x}{3}$
G $\frac{x}{5}$
H $5x$
J $3x + 2$

31 What is the measure of angle C?

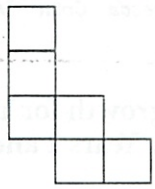


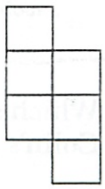
A 90°
B 30°
C 180°
D 50°

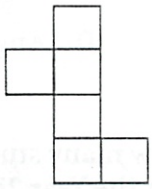
32 Which does not describe all parallelograms?

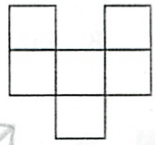
F two pairs of parallel sides
G two acute angles and two obtuse angles
H interior angles total 360°
J quadrilateral

33 Which would fold to make a cube?

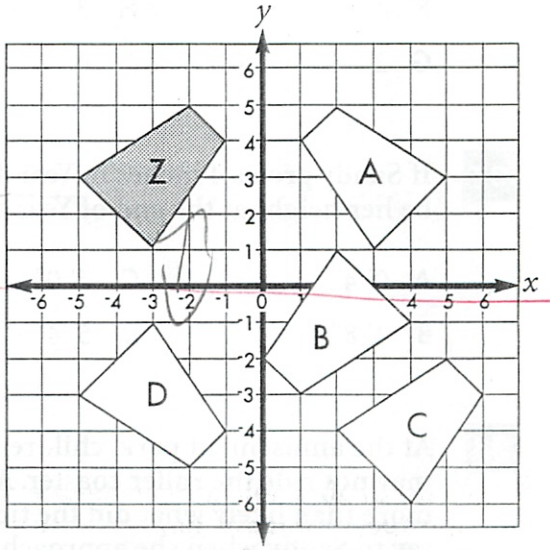
A


C


B


D


34

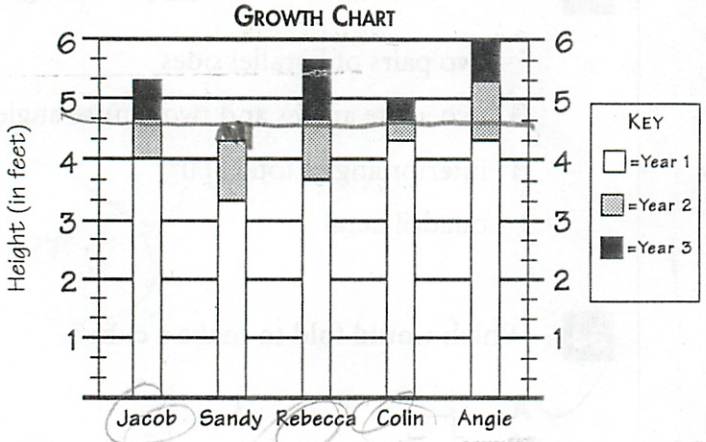


Which of the figures shows Figure Z after it has been flipped over the X-axis?

F Figure A
G Figure B
H Figure C
J Figure D

GO ON

Each student was measured once a year for three years. This stacked bar graph shows the results. Use this graph to answer questions 35 through 38.



35 Which student's growth for Year 2 matches Colin's growth for Years 2 and 3 together?

A Jacob
B Sandy
C Rebecca
D Angie

36 The heights of how many students were the same at the end of the Year 2?

F 1
G 2
H 3
J 4

37 If Sandy grows 4 inches in Year 4, what will be her height at the end of Year 4?

A 0' 4"
B 4' 8"
C 5' 0"
D 5' 4"

38 At the amusement park, children under 4'6" may not ride the roller coaster. After year 3, more than likely what did the ticket taker say to Sandy when she approached the roller coaster?

F "Step right up and ride."
G "You may not ride."
H "How much do you weigh?"
J "How old are you?"

39 Stacy has taken 3 math tests. Her average so far is 89. What does Stacy have to score on her next test to increase her average by one poir

A 89
B 90
C 91
D 93

40 On a blind draw, what is the probability that Franklin will select a white marble?

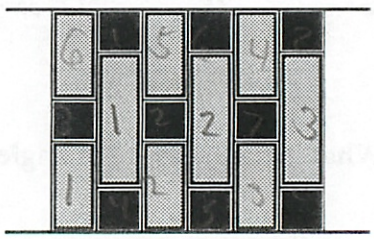
F 3
G $\frac{1}{3}$
H $\frac{2}{3}$
J $\frac{1}{9}$

41 Which number is missing from this number pattern?

33	26		12	5

A 19
B 20
C 23
D 25

42

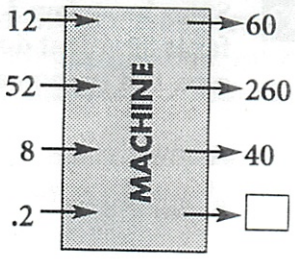


Marlene is creating a brick walkway using the pattern above. She is using three different sizes of bricks: long rectangle, short rectangle, and square. If she needs 81 rectangular bricks, how many square bricks does she need?

F 9
G 27
H 54
J 81

PRETEST: Mathematics, Part II

43 What number goes in the white box?



A .04
B 1
C 10
D 20

44 What expression goes in the box?

$16 \div 2 + \square = 32$

F (0×6)
G (2×7)
H (3×6)
J (4×6)

45 Crawford ran the race 6 seconds slower than Julia. If r stands for the time that Crawford ran the race, what is Julia's time?

A $r + 6$
B $r - 6$
C $r \times 6$
D $r \div 6$

46 What number does the letter a represent?

$a + a - b = 41$
$b + 3 = 8$

F 5
G 18
H 23
J 46

47 Jim had 36 marbles, and Teddy had 30 marbles. Jim gave half of his marbles to Teddy, and Teddy then gave half of his marbles to Bill. At that point, what was the ratio of Jim's marbles to Teddy's marbles?

A 1 : 2
B 3 : 4
C 5 : 6
D 3 : 5

48 Grover rides the bus to school on Monday, Wednesday, and Friday. He rides his bicycle to school on Tuesday and Thursday. It is exactly 8.2 miles from Grover's house to his school. Which of the following questions can not be answered using this information?

F Each week, how many days does Grover not ride the bus to school?
G How many miles is a round trip from Grover's house to his school?
H What is the ratio of days that Grover rides the bus to the days he bicycles?
J How many hours does Grover spend on the bus each week?

49 Each soda costs 65¢, and the machine only takes exact change. Shawn has one quarter, a dime, a nickel, and a dollar bill. If Shawn puts his dollar into the change machine and then buys a grape soda, how much change will he have left?

A $0.40
B $0.75
C $1.25
D $1.40

50 Use the following clues to help you figure out the geometric shape.

CLUES
- I have only two sides that are exactly the same length.
- I contain at least two acute angles.
- I do not have four sides.

F equilateral triangle
G parallelogram
H isosceles triangle
J scalene triangle

STOP

12 $98 \div {}^{-}7 =$

F $^{-}12$
G $^{-}14$
H 14
J 21
K Not Here

13 15% of 300 =

A 35
B 45
C 55
D 70
E Not Here

14 $4 \times 2 + (16 \div 8) =$

F 3
G 9
H 10
J 16
K Not Here

15 Seventh grade students received 8 lists of vocabulary words. Each list had 3 columns of words with 20 words in each column. Altogether, how many words were on the lists?

A 44
B 68
C 160
D 480
E Not Here

16 The mason built 5 feet of wall in $1\frac{1}{2}$ hours. At this rate, how many hours would it take him to build a wall 40 feet long?

F $6\frac{1}{2}$
G $7\frac{1}{2}$
H 12
J 60
K Not Here

17 Which will give the largest answer?

A 55% of 3,000
B 25% of 4,000
C 125% of 1,000
D 10% of 5,000

18 Which shows a five in the hundredths' place?

F 346.052
G 519.408
H 483.537
J 291.065

19 $(6 \times 10^4) + (3 \times 10^2)$

Which shows this value written as a numeral?

A 60,030
B 60,003
C 60,300
D 63,000

20 Which value is greater than .5?

F $\frac{1}{2}$
G 1
H .49
J 50%

GO ON

POSTTEST: Mathematics, Part I

DIRECTIONS: For all questions in Part I, solve each problem and fill in the circle on your answer sheet. For questions 1-16 only, mark *Not Here* if the correct answer is not given. If you finish Part I ahead of time, go back and check your answers.

1 $6\frac{3}{4} + 2\frac{1}{8} =$

A $8\frac{1}{8}$
B $8\frac{1}{3}$
C $8\frac{7}{8}$
D $9\frac{1}{3}$
E Not Here

2 $12\frac{1}{4} - 7\frac{1}{2} =$

F $4\frac{1}{4}$
G $5\frac{1}{4}$
H $5\frac{3}{4}$
J $6\frac{3}{4}$
K Not Here

3 $3\frac{3}{4} \times 4\frac{1}{2} =$

A $12\frac{1}{2}$
B $12\frac{3}{8}$
C $15\frac{7}{8}$
D $16\frac{7}{8}$
E Not Here

4 $3\frac{1}{6} \div \frac{1}{6} =$

F $\frac{1}{12}$
G $3\frac{1}{12}$
H 19
J 25
K Not Here

5 $44.64 + 12.4 =$

A 45.88
B 565.104
C 57.04
D 56.68
E Not Here

6 $27.69 - 3.7 =$

F 23.99
G 24.19
H 27.32
J 31.39
K Not Here

7 $3.7 \times .8 =$

A .296
B 29.6
C 24.15
D 25.5
E Not Here

8 $16.2 \div .6 =$

F 27
G 2.7
H 3.2
J 32
K Not Here

9 $^{-}13 + 9 =$

A $^{-}4$
B 4
C $^{-}16$
D $^{-}22$
E Not Here

10 $^{-}22 - 14 =$

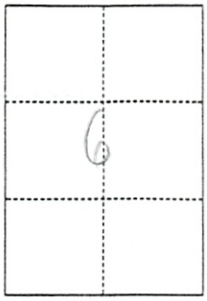
F 8
G $^{-}8$
H $^{-}32$
J $^{-}36$
K Not Here

11 $^{-}6 \times 14 =$

A 8
B $^{-}8$
C $^{-}64$
D 84
E Not Here

POSTTEST: Mathematics, Part I

21 Marjorie folds each sheet of scratch paper as shown. If she works one problem in each section, using both the front and back of her paper, how many folded sheets will she need to work 50 problems?



A 4
B 5
C 8
D 9

22 Which shows $3\frac{2}{5}$ written as a decimal?

F 3.25
G 3.4
H 15.2
J 17.5

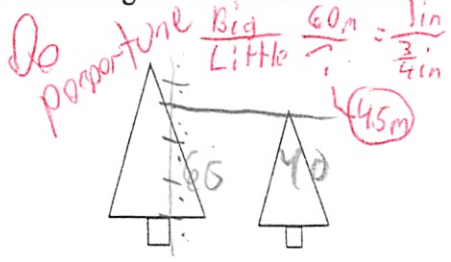
23 Which number, when divided by 3, would give a remainder of 1?

A 6381
B 2451
C 5241
D 7261

24 Which set includes the least number of members?

F prime numbers
G multiples of 3
H odd numbers
J factors of 6

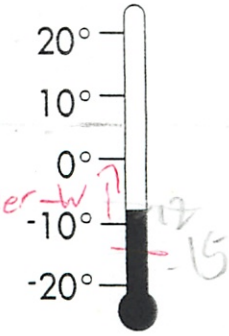
25 If the tall tree is 60 meters tall, which is the best estimate of the height of the short tree?



A 20
B 30
C 35
D 45

26 The temperature shown is 3°F warmer than yesterday's average temperature. What was yesterday's average temperature?

F -5°F
G -11°F
H 15°F
J -15°F



27 Delia bought 2 yards of fabric that was 48 inches wide. She cut the fabric into 3 equal pieces. Which could be the dimensions of each piece?

A $\frac{2}{3}$ inches × 16 inches
B 24 inches × 36 inches
C 24 inches × 48 inches
D 12 inches × 48 inches

28 If the perimeter of a rectangle is 34 cm and the length is 12 cm, what is the width?

F 5 cm
G 11 cm
H 22 cm
J 48 cm

STOP

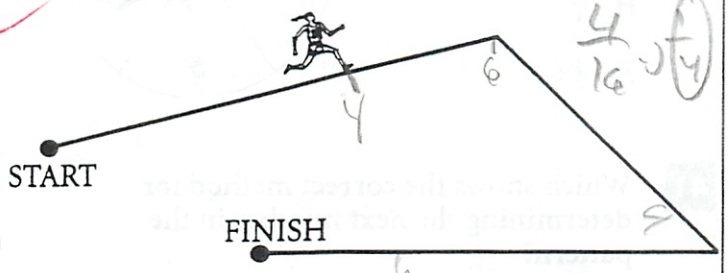
POSTTEST: Mathematics, Part II

DIRECTIONS: For questions 29-50, solve each problem and fill in the circle on your answer sheet. If you finish Part II ahead of time, go back and check your answers.

29 At $2.49 per meter, about how much should Yvonne expect to pay for a 20 cm length of chain?

A $0.25
B $0.50
C $1.50
D $24.90

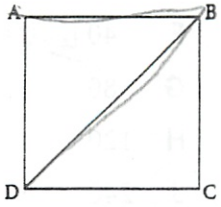
30 *Use your centimeter ruler to help answer this question.*



What part of the race has Meta completed?

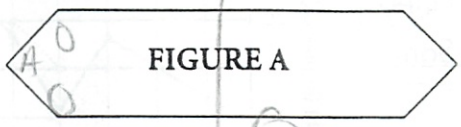
F 10%
G .25
H $\frac{3}{5}$
J 40%

31 If figure ABCD is a square, which is the measure of angle ABD?



A 35°
B 45°
C 60°
D 90°

32 Of which type of angle does figure A have the most?



F acute
G right
H obtuse
J straight

33 Figure X was folded along a line of symmetry. Which shows Figure X unfolded?

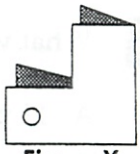
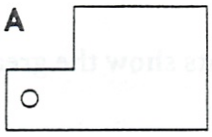


Figure X

A


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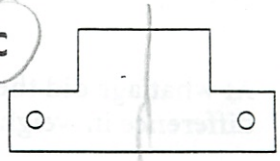

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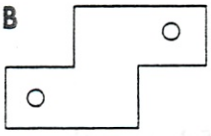
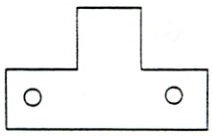
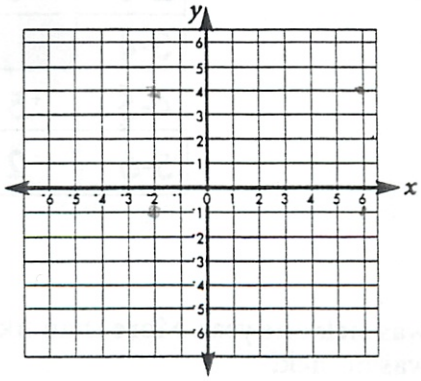


D


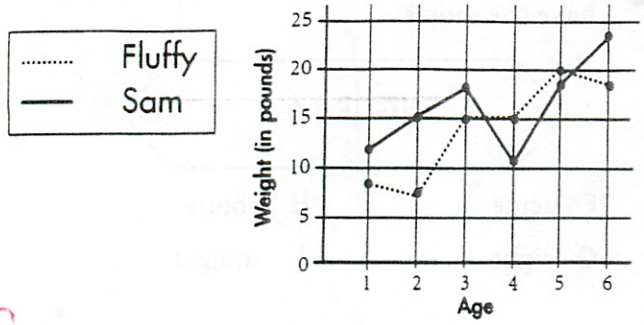
34 Rectangle ABCD is drawn on a coordinate plane with all sides parallel to either the x or y axes. If the end points of one diagonal are (-2, 4) and (6, -1), which coordinates mark the end points of the other diagonal?



F (-2, 6) and (4, -1)
G (-2, -1) and (6, 4)
H (2, -4) and (-6, 1)
J (2, -6) and (-4, 1)

GO ON

Madeline weighed her cats once a year and charted their growth. Use her graph to answer questions 35 through 38.



35 What was Fluffy's weight at age 4?

A 11 pounds
B 15 pounds
C 17 pounds
D 20 pounds

36 At what age did the two cats show the greatest difference in weight?

F 1
G 2
H 4
J 6

37 Madeline transferred Fluffy's growth information to this chart. What number belongs in the shaded box?

A 0
B +3
C +4
D -6

YEAR	CHANGE
1-2	-1
2-3	+8
3-4	
4-5	+5
5-6	-2

38 Sam was sick one year. More than likely, which year was he sick?

F 1-2
G 2-3
H 3-4
J 4-5

39 How many racers beat the average time?

A 1
B 2
C 3
D 4

Racer	Seconds
Leon	54
Cody	48
Jeff	50
Karim	53
Ben	50

40 What is the probability of spinning a prime number?

F $\frac{1}{3}$
G $\frac{3}{5}$
H $\frac{3}{4}$
J $\frac{4}{5}$

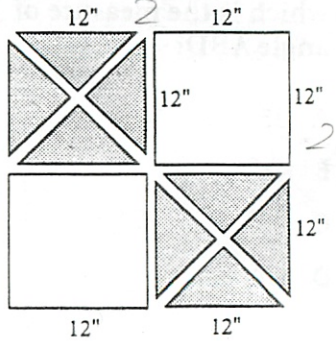
41 Which shows the correct method for determining the next number in the pattern?

1 +1 2 +2 4 +3 7 +4 11 +5 16

A Double 11.
B Add 5 to 11.
C Find the next prime number.
D Add 7 to 11.

42 Martin wants to install tile in his kitchen following the pattern shown below. If his kitchen is 120 square feet, how many triangular tiles must he buy?

F 40
G 80
H 120
J 240



GO ON

POSTTEST: Mathematics, Part II

43 This machine performs the same operation on every input number. What is that operation?

Input	Output
60	6
16	1.6
6	.6

A multiplies by 10
B divides by .1
C divides by 10
D multiplies by .01

44 What could go in the box to make the number sentence true?

$\square \div 12 + 8 = 11$

F (6×2)
G 3^2
H 6^2
J $6\frac{1}{2}$

45 Huntington is twice as far from Danvers as it is from Essex. If k represents the distance from Huntington to Essex, which would represent the distance from Huntington to Danvers?

A $k + 2$
B $k - 2$
C $k \times 2$
D $k \div 2$

46 If x is a whole number, which could be the value of b?

$x + x + x + b = 11$

F 1
G 2
H 3
J 4

47 Jason's "mystery number" is in the box. The number is not prime. The number is a multiple of 3. The number is odd. What is Jason's "mystery number"?

A 23
B 26
C 47
D 57

57	55
54	
23	47

48 When Renee bought 6 boxes of party favors with 8 favors in each box, she received $5.60 in change from a 20-dollar bill. Which of these questions could be answered from this information?

F How much did the party favors cost?
G How many people did Renee give party favors to?
H How much altogether did Renee spend on the party?
J How many people were invited to the party?

49 Which blocks must the boys trade to tie the game?

Points	
□	= 1
■	= 5
■	= 10

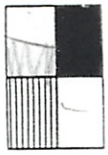
Ernie

Joey

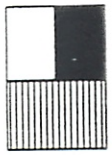
A Joey gives Ernie □, Ernie gives Joey ■
B Joey gives Ernie ■, Ernie gives Joey ■ □
C Joey gives Ernie ■, Ernie gives Joey □
D Joey gives Ernie ■, Ernie gives Joey □

50 Stanley wants to increase the size of his garden. If he decreases the size of the lawn by $\frac{1}{4}$, which shows how the new diagram of Stanley's property could look?

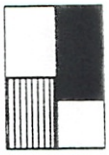
Stanley's Property



F

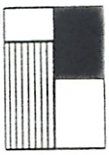


H

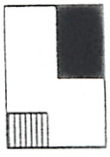


KEY
GARDEN
LAWN
HOUSE

G



J



STOP