

Michael Plasnoir

Grading for Overland Trail Portfolio

	POINTS
Cover Page with title, name & date-----	1 ✓
List of Topics Studied ----- ^{- list}	5 ok!
All Quizzes -----	1 ✓
All POW grading sheets ² -----	1 ✓
Homework assignments -----	12 ✓
Total-----	20

20

The Overland Trail

Michael Plasmeier - 4/4/05



Michael Plasmeier
4/3/2005
P.D.:7

List of Topics Studied

- Graphing
 - Equations
 - Solving Equations, Solving Equations, and even more .. Solving Equations
 - Slope
 - Line of Best Fit
 - Y-Intercept Value and Points
 - X and Y axis
 - $y=m(x)+b$
 - calculator graphing
 - Scientific make-up of cow patties –just kidding
- summary phrases

Name

Michael Ploameier

8848

Quiz

(35 points)

35

Use the lists of variables to answer the following:

A) Write a **summary phrase** to match the following algebraic expressions.

1) $F(W + C)T$

The number of women and children on the trail in a year

2) HAY

The amount of water consumed by all the oxen for 1 wagon for 1 day

3) $(H + B)D$

The amount of water consumed by 1 ox and 1 person over the length of the trail

Sp

4) $PAY + L$

The weight of all the oxen for 1 wagon plus the load of 1 wagon

B) Write an **algebraic expression** to match the following summary phrases.

5) The number of men on one wagon train.

$M \cdot F$

6) The amount of water consumed by one family in one day.

$(M + W + C) B$

7) The amount of grass consumed by the oxen of one wagon for the entire trip.

$G A Y D$

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Overland Trail Quiz #

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(50 points)

49

Symbol	Meaning
B	the number of boys in period one
G	the number of girls in period two
Bs	the number of boys playing a sport
Gs	the number of girls playing a sport
Mh	the number of minutes each student spends on homework each night
Ms	the number of minutes a student in sports spends practicing each day
C	the amount of money each student spends on lunch each day

Write a summary phrase for each of the following algebraic expressions. Write "no meaning" if it is not possible.

- 1) $(Bs)Ms$ The amount of time the boys spent practicing in 1 day ^{who played sports}
- 2) $C(Mh)$ No meaning
- 3) $Gs(Mh + Ms)$ The number of minutes the girls spent on homework and practicing sports in 1 day ^{sports}

Evaluate each algebraic expression if $x = -2$, $y = 3$ and $z = -1$.

4) $-z^2 + 3y - 2x = 12$

$$-(-1)^2 + 3(3) - 2(-2)$$

$$-1 + 9 + 4$$

12

5) $-z^{17} - xy = 7$

$$-(-1)^{17} - (-2)(3)$$

$$1 - -6$$

7

Evaluate each algebraic expression if $m = -1.2$, $n = 0.4$ and $p = -0.6$.

6) $-2m - p^2 + n^3 = 2.104$

$$-2(-1.2) - (-0.6)^2 + (0.4)^3$$

$$2.4 - .36 + .064$$

$$2.464 - .36$$

2.104

7) $np - 2m = 2.16$

$$(0.4)(-0.6) - 2(-1.2)$$

$$-.24 + 2.4$$

2.16

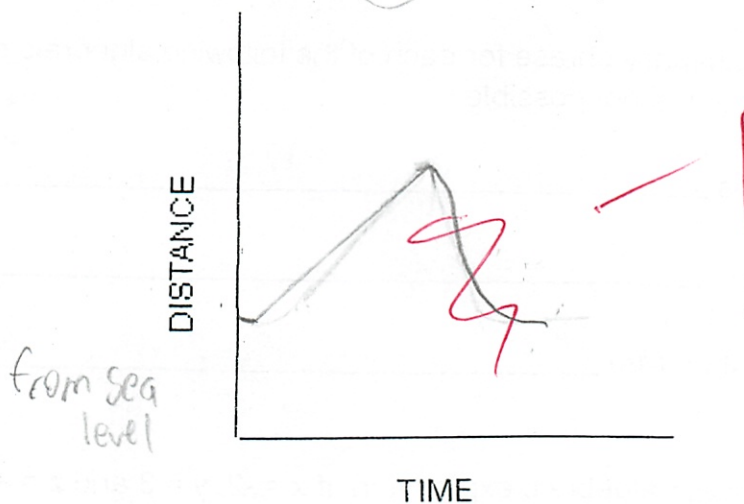
- (V) Fraction ✓
8) Evaluate $x^2 - y^3$ if $x = 2\frac{1}{4}$ and $y = -\frac{1}{2}$

$$\left(2\frac{1}{4}\right)^2 - \left(-\frac{1}{2}\right)^3$$
$$5\frac{1}{16} + \frac{1}{8}$$

$$\left(5\frac{3}{16}\right)$$

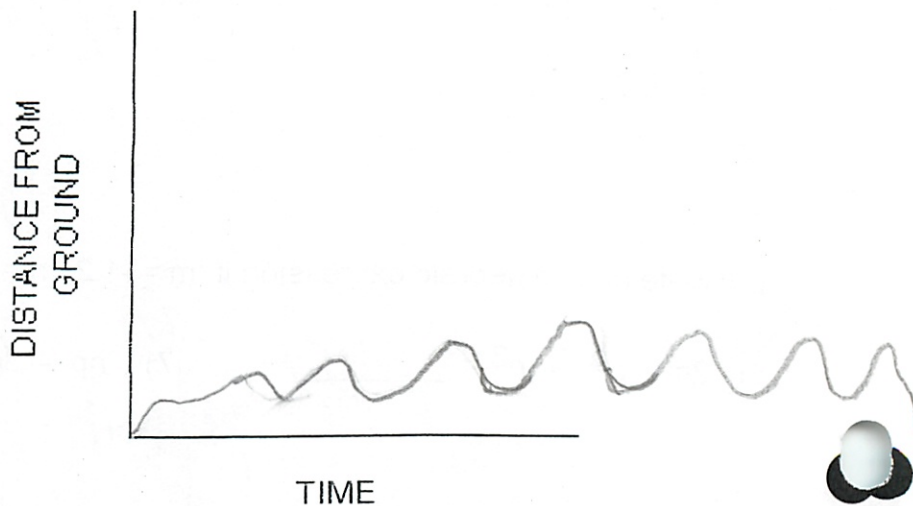
Graph each of the following situations.

- 9) A woman climbs a hill at a steady pace and then starts to run down the other side.



- 10) A child swinging on a swing.

getting on
to getting off



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Overland Trail QUIZ

8848
50 POINTS

Date: 2/16

Faults - Can't add $6+2+192$

43 Sub Wrong

Evaluate each algebraic expression if $x=3$, $y=-2$, $z=-4$

1) $-y+2x-3z^3$

$$-(-2) + 2(3) - 3(-4)^3$$

$$2 + 6 - 3(-64)$$

$$2 + 6 + 192$$

can't add
3

200

3) $x + 2(z-2y) - xy^2$

$$3 + 2((-4) - 2(-2)) - (3)(-2)^2$$

$$3 + 2(-4 + 4) - 3(4)$$

$$3 + 0 - 12$$

(-9)

2) $-z^2 - xz$

$$-(-4)^2 - (3)(-2)$$

$$-16 + 6$$

(-10)

(-4)

not x

-4

Sub wrong

A. ✓

4) $x^3 - y - z^2$

$$(3)^3 - (-2) - (-4)^2$$

$$27 + 2 - 16$$

(13)

Evaluate each algebraic expression if $x=-0.2$, $y=0.3$, $z=-1.1$

5) $-3+2z-x$

$$-3 + 2(-1.1) - (-0.2)$$

$$-3 - 2.2 + 0.2$$

(-5)

6) $x-z^2+2y$

$$(-0.2) - (-1.1)^2 + 2(0.3)$$

$$-0.2 - 1.21 + 0.6$$

(-0.81)

(7)

Evaluate each algebraic expression if $x = -\frac{1}{3}$, $y = \frac{1}{2}$, $z = -1\frac{1}{6}$ WORK IN FRACTIONS ONLY!

7) $-3z - x + y$

$$-3\left(-1\frac{1}{6}\right) - \left(-\frac{1}{3}\right) + \frac{1}{2}$$

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

✓ $\left(4\frac{1}{3}\right)$

8) $xy \div z$

$$\left(-\frac{1}{3}\right)\left(\frac{1}{2}\right) \div \left(-1\frac{1}{6}\right)$$

$$-\frac{1}{6} \div \left(-1\frac{1}{6}\right)$$

✓

~~$$\left(-\frac{1}{6}\right) \div \left(-1\frac{1}{6}\right)$$~~

$\left(\frac{1}{7}\right)$

9) $x^2 - z$

$$\left(-\frac{1}{3}\right)^2 - \left(-1\frac{1}{6}\right)$$

$$\frac{1}{9} + 1\frac{1}{6}$$

✓ $\left(1\frac{5}{18}\right)$

10) $-3x^2 + 2z - y^3$

$$-3\left(-\frac{1}{3}\right)^2 + 2\left(-1\frac{1}{6}\right) - \left(\frac{1}{2}\right)^3$$

$$-3\left(\frac{1}{9}\right) - 2\frac{1}{3} - \frac{1}{8}$$

$$-\frac{1}{3} - 2\frac{1}{3} - \frac{1}{8}$$

$$-2\frac{2}{3} - \frac{1}{8}$$

$\left(-2\frac{19}{24}\right)$

Didn't cube y

Name : Michael Plasmeier
Overland Trail QUIZ 2

50 POINTS

Date : 2/28

Evaluate each algebraic expression if $x = 4$, $y = z = -2$

1) $-y + 2x - 3z^3$

$$-(-2) + 2(4) - 3(-2)^3$$

$$2 + 8 - 3(-8)$$

$$10 + 24$$

✓ (34)

2) $-z^2 - xz$

$$-(-2)^2 - (4)(-2)$$

$$-4 + 8$$

✓ (4)

4) $x^3 - y - z^2$

$$(4)^3 - (-2) - (-2)^2$$

$$64 + 2 - (4)$$

$$66 - 4$$

$$66 - 4$$

✓ (62)

3) $x + 2(z - 2y) - xy^2$

$$(4) + 2((-2) - 2(-2)) - (4)(-2)^2$$

$$4 + 2(-2 + 4) - (4)(4)$$

$$4 + 2(2) - (4)(4)$$

$$8 - 16$$

(-8) ✓

Evaluate each algebraic expression if $x = -0.3$, $y = 0.2$, $z = -1.2$

5) $-3 + 2z - x$

$$-3 + 2(-1.2) - (-0.3)$$

$$-3 - 2.4 + .3$$

$$-5.4 + .3$$

(-5.1)

6) $x - z^2 + 2y$

$$(-.3) - (-1.2)^2 + 2(.2)$$

$$-.3 - 1.44 + .4$$

$$-1.74 + .4$$

(-1.34)

Evaluate each algebraic expression if $x = -\frac{1}{2}$, $y = \frac{2}{3}$, $z = -1\frac{1}{4}$ WORK IN FRACTIONS ONLY!

7) $-3z - x + y$

$$-3\left(-1\frac{1}{4}\right) - \left(-\frac{1}{2}\right) + \left(\frac{2}{3}\right)$$

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

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

✓ $4\frac{11}{12}$

8) $xy \div z$

$$\left(-\frac{1}{2}\right)\left(\frac{2}{3}\right) \div \left(-1\frac{1}{4}\right)$$

$$-\frac{1}{3} \div -1\frac{1}{4}$$

✓ $\frac{4}{15}$

9) $x^2 - z$

$$\left(-\frac{1}{2}\right)^2 - \left(-1\frac{1}{4}\right)$$

$$\frac{1}{4} + 1\frac{1}{4}$$

✓ $1\frac{1}{2}$

10) $-3x^2 + 2z - y^3$

$$-3\left(-\frac{1}{2}\right)^2 + 2\left(-1\frac{1}{4}\right) - \left(\frac{2}{3}\right)^3$$

$$-3\left(\frac{1}{4}\right) - 2\frac{1}{2} - \frac{8}{27}$$

$$-\frac{3}{4} - 2\frac{1}{2} - \frac{8}{27}$$

$$-3\frac{1}{4} - \frac{8}{27}$$

✓ $-3\frac{59}{108}$

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Overland Trail Quiz

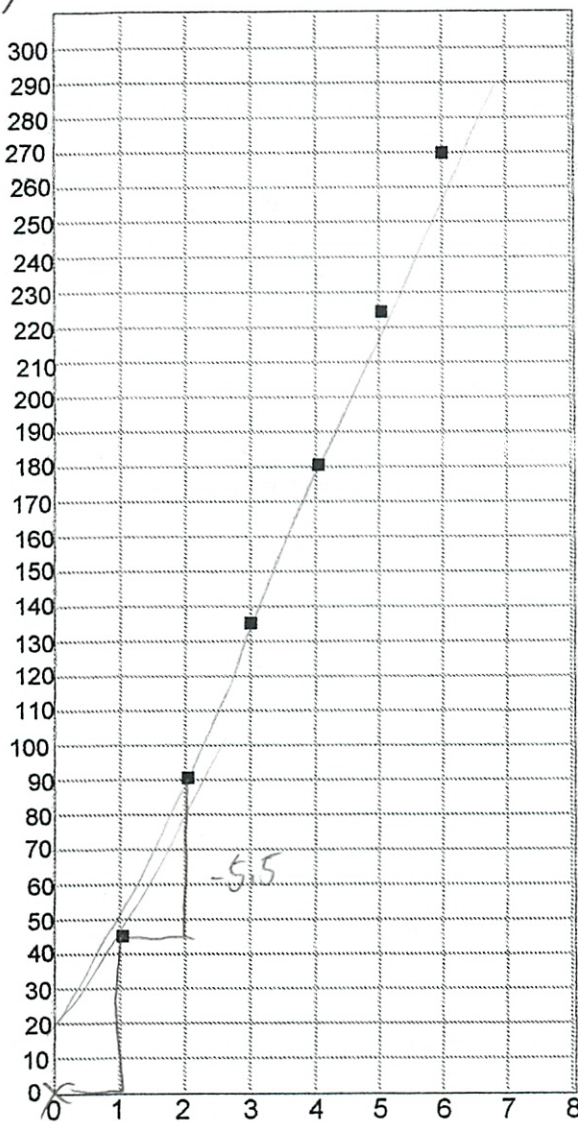
88 48

Date 3/15

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$$\begin{array}{l} (1, 45) \\ (2, 90) \end{array} \quad 45$$

$$\frac{45}{1} = 45x$$

$$\frac{40}{40}$$

1) The graph above represents the distance traveled during a six hour time period by Mr. Trabosh.

a) How far did he travel in 3 hours? 135 miles

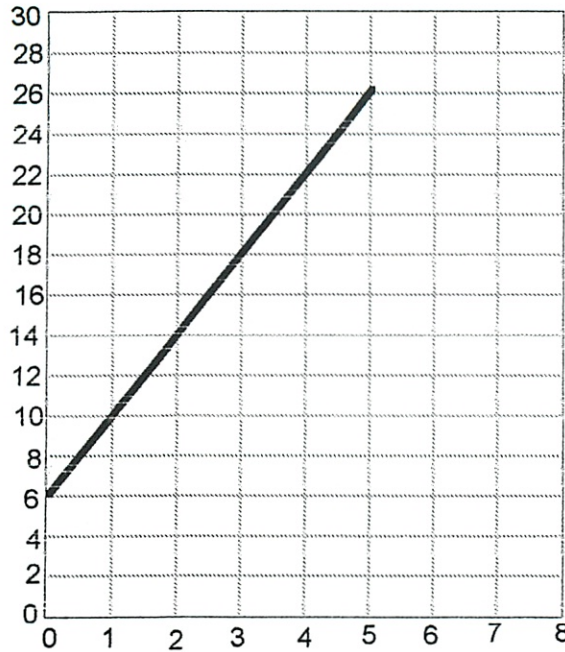
b) Is Mr. Trabosh traveling at a constant rate? Yes

c) Give a rule (equation) that would represent this situation.

$$y = 45x$$

d) What is his average speed (miles per hour)? 45 mph

2) Find the rule (equation) of the line graphed below. Show all your work.



X	Y
1	10
4	22
0	6
1	10
5	26

+20

$$\frac{20}{5} = 4x + b$$

$$6 = 4(0) + b$$

$$6 = 0 + b$$

$$6 = b$$

$$y = 4x + 6$$

3) John is checking his most recent long distance phone bill. A phone call that lasted 3 minutes cost him \$2.25. Another phone call of 8 minutes cost \$6.00. The last call on his bill was for \$13.50 and lasted 18 minutes.

- Draw a graph representing this information on a **sheet of graph paper**.
- Give a rule (equation) that represents the situation. **Show your work clearly.**

$$\begin{array}{l} -10 \left(\begin{array}{l} 18, 13.50 \\ 8, 6 \end{array} \right) \leftarrow -7.50 \end{array}$$

$$\frac{7.5}{10} \quad \frac{3}{4}$$

$$y = \frac{3}{4}x$$

$$\begin{aligned} 13.50 &= 18\left(\frac{3}{4}\right) + b \\ -13.50 &-13.50 \\ 0 &= b \end{aligned}$$

$$\begin{array}{r} 2 \\ 18 \\ +3 \\ \hline 54 \\ 13.5 \\ \hline 4 \overline{) 54} 20 \end{array}$$

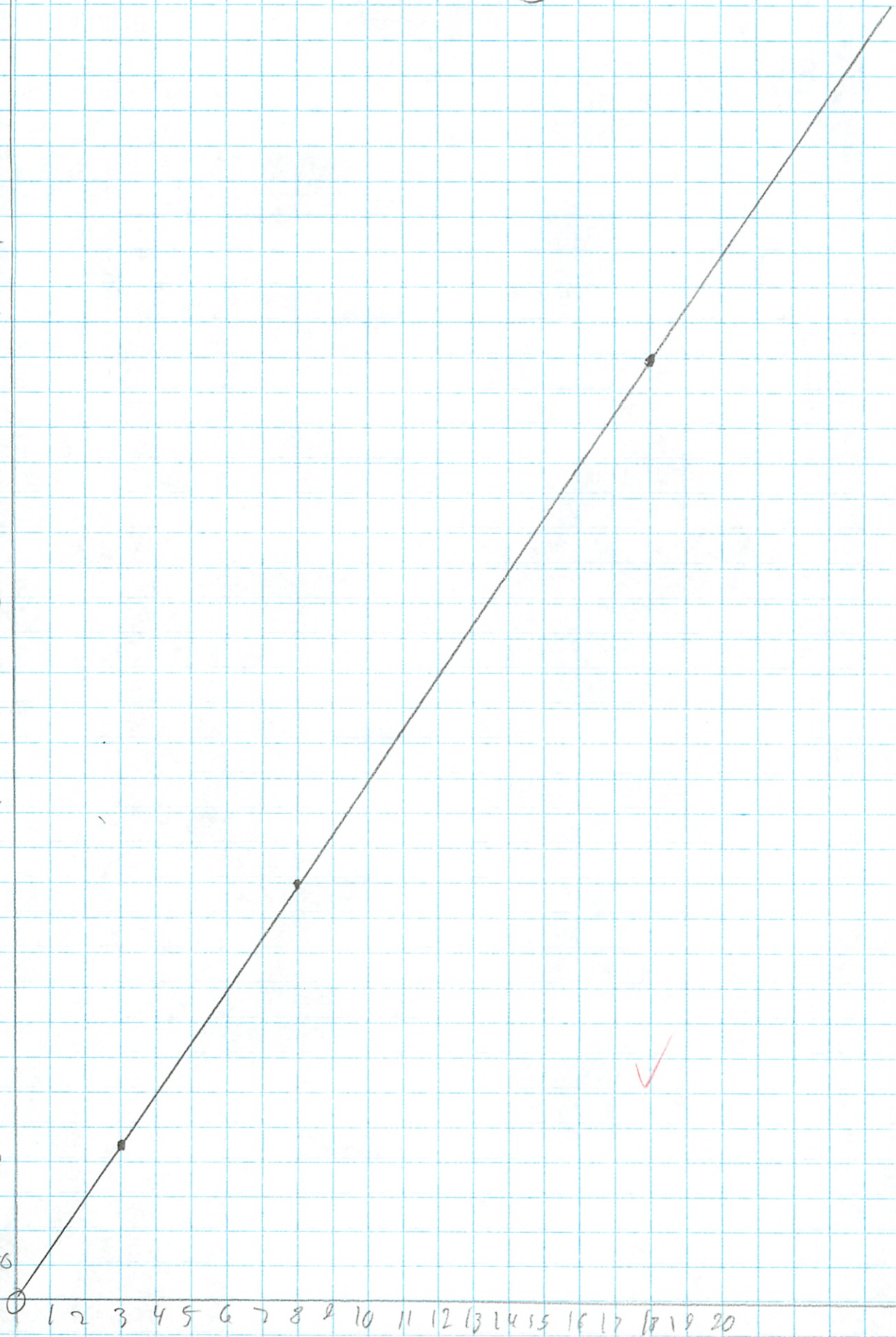
c) What is the cost per minute of a long distance phone call? \$ 0.75

FB
Michael
Plasencia

Cost of Calls

\$

18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0



Min

GRADING FOR POW 8

1) Process

Description of process omitted-----	0
Incomplete description of process-----	5
Complete description of process-----	10

2) Solutions

Incorrect solution, no support-----	0
Incorrect solution, some support-----	3
Correct solution, no support-----	6
Correct solution, some support-----	8
Correct solution, and explains how you know your weights work and how you know that you have not missed some other possibilities-----	10

20

wow!

Hint 1 - No Fraction/Decimals

If B are same, check again

(can't)

Checking for only solution, show

example that there isn't

+ if there is - make sure

There is more ways -

GRADING FOR POW 9

Points

1) Process

Description of methods used in attacking problem omitted----- 0
Minimum descriptions or diagrams omitted----- 3
Complete description and diagrams included ----- 5

2) Solution

Wrong answer not defended----- 1
Correct answer not defended, discussion of other possibilities omitted----- 3
Wrong answer some support, discussion of other possibilities included----- 4
Correct, defended with mathematical reasoning, has errors, ----- 6
Correct answer defended, discussion of other possibilities omitted----- 8
Correct answer defended, discussion of other possibilities included----- 10

Total Points----- 15

15

Wow

New
York

San Francisco



2 answers

Are they leaving?
the 1st ship in 7 mts
do yes and no

12

man

Family Constraints (744)

1/12

Michael Plasmeyer

$$\begin{array}{r} 10 - 30 - 50 \\ 5 - 30 - 55 \\ \hline 25 \qquad 25 \end{array}$$

) Reasonable because
some time between
people

2. $\begin{array}{r} \text{\textcircled{8}} - 30 - 60 \\ \quad \quad \quad \underbrace{\hspace{1cm}} \quad \underbrace{\hspace{1cm}} \\ \quad \quad \quad 30 \quad \quad 30 \end{array}$

3. ~~average time between lowest age (1st gen)~~

3', amount over the youngest

Let x = age of youngest child

$$300 + 10 + 30 + 50$$

1 generation gap

Assign variables meaning

4. $5 + 5 + 30 + 50$

quantity

$$\sim (3+C) \ln$$

b. $0 + 20 + 20 + 50$

$$c \quad 5 + 30 + 55$$

Remember restrictions

d. youngest age

~~e ant older than youngest~~ gen gap

f can have different things (youngest are younger)

$$8 + 8 + 26 + 44$$

Solving Equations

$$\begin{array}{r} 40 \\ 136 \\ \hline 54 \\ 136 \\ \hline 364 \end{array}$$

Sublette's Cutoff (#16)

2/17

- Jones $y = -3.66x + 55$

- Stanford $y = -7.86x + 81$

- Minto $y = -2.10x + 35$

X intersection

15.26

10.37

17.04

#2

If more than 15 - will make

Instead of
Zooming in
Use table
or sub

Or find
point of intercept
w/ $x=0$

Jones

X	Y
1	52
2	49
3	41
4	34

-8

-4

-1

-4x + 56

Find x intercept

$$52 = -4(1) + b$$

$$52 = -4 + b$$

$$56 = b$$

Sept or x intercept

$$y = -4x + 56$$

$$0 = -4x + 56$$

$$4x = 56$$

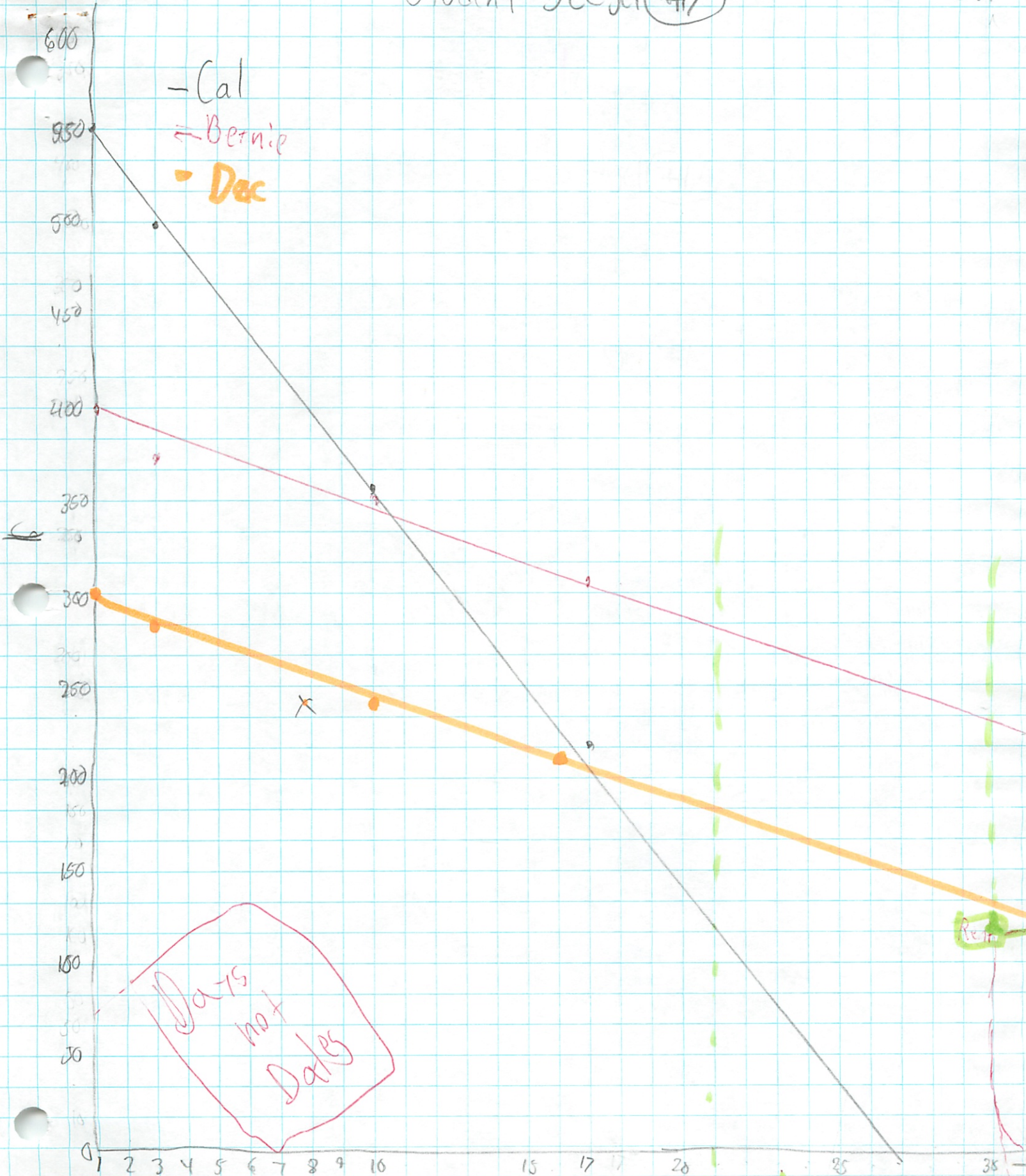
$$x = 14$$

#2 My graph shows the Jones and Minto will miss by $\frac{1}{2}$ day and $\frac{1}{4}$ a day respectively, however, my calc will show that they both will make it. The Standfords will definitely die if it. I think it's a constant

Student Budget (#17)

3/1

- Cal
- Bernie
- Dec



Dates
not
Dats

Concert

Rem

0 1 2 3 4 →

Use Days not Dates Dates in April

29th day Rent Due → May

17 Qv

3/1

2. Bernie + Doc can pay their part of the rent on time. They will need to bail Cal out who needs to spend less \$ on the ladies during the month.

3. Doc can spend about \$5 dollars on tickets
Cal needs all the \$ he can get
Bernie can spend ^{about} \$100 on tickets

Cal	
x	y
1	550
3	498
10	352
17	226

Bernie	
x	y
1	400
3	383
10	349
17	313

Doc	
x	y
1	380
3	285
10	245
17	215

x intercept is given

$$\frac{-52}{2} = -26x$$

$$550 = -26(1) + b$$

$$550 = -26 + b$$

$$576 = b$$

$$\frac{-17}{2} = -8\frac{1}{2}x$$

$$400 = -8\frac{1}{2}(1) + b$$

$$400 = -8\frac{1}{2} + b$$

$$408\frac{1}{2} = b$$

$$\frac{-15}{2} = -7\frac{1}{2}x$$

$$380 = -7\frac{1}{2}(1) + b$$

$$380 = -7.5 + b$$

$$387.5 = b$$

$$y = -26x + 576$$

$$y = -8\frac{1}{2}x + 408\frac{1}{2}$$

$$y = -7\frac{1}{2}x + 387.5$$

\$ spent a day

$$y = mx + 400$$

$$y = mx + 550$$

$$y = -20x + 550$$

$$150 = -20x + 550$$

$$-400 = -20x$$

$$\rightarrow 20x$$

Runs out on 20th day
Apr 21

amount must end w/

Name Michael Plasme'd
Date 1/28

Overland Trail Worksheet

Evaluating algebraic expressions #1

If all are fractions,
must use fractions

Order of ops

Exponents (2nd)

A) Evaluate the algebraic expressions below if $x = -1$, $y = 3$, and $z = -4$.

SHOW ALL WORK

1) $-2x^2$

$$\begin{aligned} &-2(-1)^2 \\ &-2(1) \\ &(-2) \end{aligned}$$

2) $-z + 3y - 2x$

$$\begin{aligned} &-(-4) + 3(3) - 2(-1) \\ &4 + 9 + 2 \\ &(15) \end{aligned}$$

3) $3x + -z^3 + (-z - x^3)$

$$\begin{aligned} &3(-1) + -(-4)^3 + (-(-4) - (-1)^3) \\ &-3 - (-64) + (4 + 1) \\ &-3 + 64 + 5 \\ &(66) \end{aligned}$$

4) $2x^2 + 4 - 2z$

$$\begin{aligned} &2(-1)^2 + 4 - 2(-4) \\ &2 \times 1 + 4 - (-8) \\ &2 + 4 + 8 \\ &(14) \end{aligned}$$

5) $4y + 2x - 3z$

$$\begin{aligned} &4(3) + 2(-1) - 3(-4) \\ &12 + -2 - (-12) \\ &12 - 2 + 12 \\ &(22) \end{aligned}$$

6) $-z^2 - x^2 - y^3$

$$\begin{aligned} &-(-4)^2 - (-1)^2 - 3^3 \\ &-16 - 1 - 27 \\ &(-26) \end{aligned}$$

$3^3 = 27$

$\frac{5}{6}$ - Pretty Good

must
be
fractions

$$\begin{aligned} x &= -2\frac{1}{4} \\ y &= -3\frac{1}{3} \\ z &= \frac{1}{4} \end{aligned}$$

$$\begin{aligned} & -2 + 3(-2x) \\ & -\frac{1}{4} + 3\left(-3\frac{1}{3}\right) - 2\left(-2\frac{1}{2}\right) \\ & -\frac{1}{4} \times 10 + 5 \times 4\frac{1}{2} \\ & -5\frac{1}{4} + 10 \end{aligned}$$

$$9\frac{5}{4} - 4\frac{2}{4} + 10 = 5\frac{1}{4}$$

$$\begin{aligned} & 4\frac{3}{4} \\ & -5\frac{3}{4} \end{aligned}$$

$$\frac{8}{1}, \frac{10}{8}, -1$$

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

$$\begin{aligned} x &= .1 \\ z &= -0.12 \end{aligned}$$

$$\begin{aligned} & 2x^2 + 4 - 2z \\ & 2(.1)^2 + 4 - 2(-.12) \\ & 2(.01) + 4 + .24 \\ & .02 + 4 + .24 \end{aligned}$$

$$4.02 + .24$$

$$3.06$$

$$4.26$$

$$\begin{aligned} & .12 \\ & 2 \\ & \hline & .24 \end{aligned}$$

#5

$$4y + 2x - 3z$$

$$4\left(\frac{2}{3}\right) + 2\left(-\frac{1}{2}\right) - 3\left(-2\frac{1}{4}\right)$$

$$2\frac{2}{3} + -1 + 6\frac{3}{4}$$

$$9\frac{5}{12} - 1$$

$$8\frac{5}{12}$$

Correct

$$x = -\frac{1}{2}$$

$$y = \frac{2}{3}$$

$$z = -2\frac{1}{4}$$

#6

$$-z^2 - x^2 - y^3$$

$$-(-2\frac{1}{4})^2 - (-\frac{1}{2})^2 - (\frac{2}{3})^3$$

$$-5\frac{1}{16} - \frac{1}{4} - \frac{8}{27}$$

$$-4\frac{13}{16} - \frac{8}{27}$$

$$-5\frac{47}{432}$$

-5 263/432

sign error

$$-z^2 - x^2 - y^3$$

$$-(-2\frac{1}{4})^2 - (-\frac{1}{2})^2 - (\frac{2}{3})^3$$

$$-5\frac{1}{16} - \frac{1}{4} - \frac{8}{27}$$

$$-5\frac{5}{16} - \frac{8}{27}$$

$$-5\frac{263}{432}$$

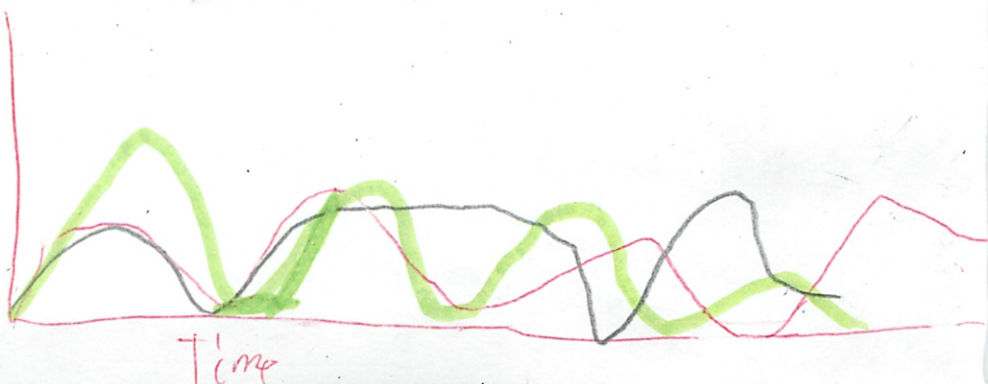
2/2/2005
P.D.:7

Algebra Worksheet #2

Corrected by Calculator

H. Pizza → Oakmont

— Mine
— As
— Sord

Speed of
Car

Name Michael Plasmeier
Date _____

Overland Trail Worksheet
Evaluating algebraic expressions #3

Be sure you show all steps. You may use a calculator, however, fractional substitutions must yield a fractional answer while decimal substitutions may yield a decimal or a fractional answer.

SHOW ALL WORK

A) Evaluate the algebraic expressions below if $x = -\frac{1}{2}$, $y = \frac{2}{3}$, and $z = -2\frac{1}{4}$

1) $-2x^2$
 $-2\left(-\frac{1}{2}\right)^2$
 $-2\left(\frac{1}{4}\right)$
 $\left(-\frac{1}{2}\right)$
 Calc = $(-1.5)^2$
 Not -0.5^2

2) $-z + 3y - 2x$
 $-(-2\frac{1}{4}) + 3\left(\frac{2}{3}\right) - 2\left(-\frac{1}{2}\right)$
 $2\frac{1}{4} + 2 + 1$
 $4\frac{1}{4} + 1$
 $5\frac{1}{4}$

3) $3x + -z^3 + (-z - x^3)$

$3\left(-\frac{1}{2}\right) + -\left(2\frac{1}{4}\right)^3 + \left(-2\frac{1}{4} - \left(-\frac{1}{2}\right)^3\right)$
 $-1\frac{1}{2} + 2\frac{25}{64} + \left(2\frac{1}{4} - -\frac{1}{8}\right)$
 $-1\frac{1}{2} + 11\frac{25}{64} + \left(2\frac{1}{4} + \frac{1}{8}\right)$
 $\frac{7}{8} + 11\frac{25}{64} + 2\frac{3}{8}$
 $12\frac{17}{32}$

4) $2x^2 + 4 - 2z$

$2\left(-\frac{1}{2}\right)^2 + 4 - 2\left(-2\frac{1}{4}\right)$
 $2\left(\frac{1}{4}\right) + 4 - -4.5$
 $0.5 + 4 + 4.5$
 9

5) $4y + 2x - 3z$

NC $4\left(\frac{2}{3}\right) + 2\left(-\frac{1}{2}\right) - 3\left(-2\frac{1}{4}\right)$
 $2\frac{2}{3} + -1 + 6\frac{3}{4}$
 $9\frac{5}{12} - 1$
 $8\frac{5}{12}$

6) $-z^2 - x^2 - y^3$

WC $-(-2\frac{1}{4})^2 - \left(-\frac{1}{2}\right)^2 - \left(\frac{2}{3}\right)^3$
 $-5\frac{1}{16} - \frac{1}{4} - \frac{8}{27}$
 $-5\frac{47}{144} - \frac{8}{27}$
 $-5\frac{263}{432}$

Watch Signs

Name Michael Plasmeier
Date 2/1

Overland Trail Worksheet Evaluating algebraic expressions #2

Be sure you show all steps. You may use a calculator, however, fractional substitutions must yield a fractional answer while decimal substitutions may yield a decimal or a fractional answer.

SHOW ALL WORK

when 1 decimal get
12 there are 2 decimal

A) Evaluate the algebraic expressions below if $x = -0.1$, $y = 0.03$, and $z = -0.4$.

1) $-2x^2$

$$\begin{aligned} & -2(-.1)^2 \\ & -2(0.01) \\ & -0.02 \end{aligned}$$

$(-1)^2$ Not -1^2

2) $-z + 3y - 2x$

$$\begin{aligned} & -(-0.4) + 3(0.03) - 2(-.1) \\ & .4 + .09 + .2 \\ & .69 \end{aligned}$$

3) $3x + -z^3 + (-z - x^3)$

$$\begin{aligned} & 3(-.1) + -(-.4)^3 + (-(-.4) - (-.1)^3) \\ & -.3 + .064 + (.4 - -.001) \\ & -.3 + .401 \\ & .101 \end{aligned}$$

4) $2x^2 + 4 - 2z$

$$\begin{aligned} & 2(-.1)^2 + 4 - 2(-.4) \\ & 2(0.01) + 4 + .8 \\ & .02 + 4.8 \\ & 4.82 \end{aligned}$$

Watch Signs

5) $4y + 2x - 3z$

$$\begin{aligned} & 4(0.03) + 2(-.1) - 3(-.4) \\ & .12 + -.2 + 1.2 \\ & -.06 + 1.2 \\ & 1.14 \end{aligned}$$

6) $-z^2 - x^2 - y^3$

$$\begin{aligned} & -(-.4)^2 - (-.1)^2 - (0.03)^3 \\ & -.16 - .01 - .000027 \\ & -.17000027 \end{aligned}$$

Name

Michael Plasmore

Date

2/2

Overland Trail Worksheet

Evaluating algebraic expressions #4

Be sure you show all steps. You may use a calculator, however, fractional substitutions must yield a fractional answer while decimal substitutions may yield a decimal or a fractional answer.

SHOW ALL WORK

A) Evaluate the algebraic expressions below if $x = 2.1$, $y = -0.03$, and $z = -0.5$.

1) $-3x^2$

$-3(2.1)^2$

$-3(4.41)$

-13.23

2) $-z - 3y - 2x$

$-(-.5) - 3(-.03) - 2(2.1)$

$.5 + .09 - 4.2$

$.59 - 4.2$

-3.61

$-(-.5)$
 $.5$

3) $x \div y + -z^3 + (-z - y)$

$(2.1)/(-.03) + -(-.5)^3 + (-(-.5) - (-.03))$

$21 + 1.25 + (.5 + .03)$

$69.78 - 70.8 + .53$

-69.595

-69.345

Sign Error

4) $(x - 2)^2 + 10y - 2z$

$(2.1 - 2)^2 + 10(-.03) - 2(-.5)$

$(.1)^2 - .3 + 1$

$.01 - .3 + 1$

$-.29 + 1$

$.71$

5) $4y + 2 \div z - 3x$

$4(-.03) + 2/(-.5) - 3(2.1)$

$-.12 - 4 - 6.3$

$-.12 - 10.3$

-10.42

6) $-z^2 - x - y^3$

$-(-.5)^2 - 2.1 - (-.03)^3$

$-.25 - 2.1 + .00027$

$-2.35 + .00027$

-2.35027

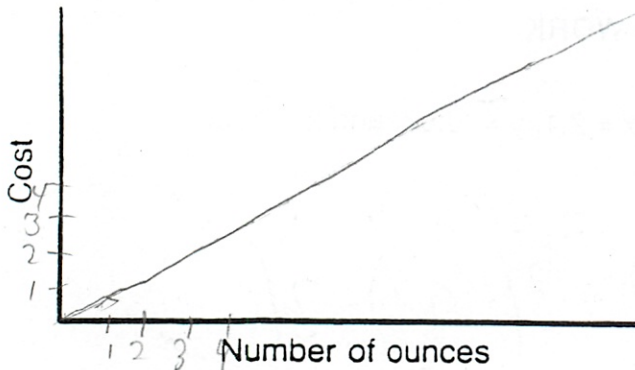
-2.349972

Sign Error

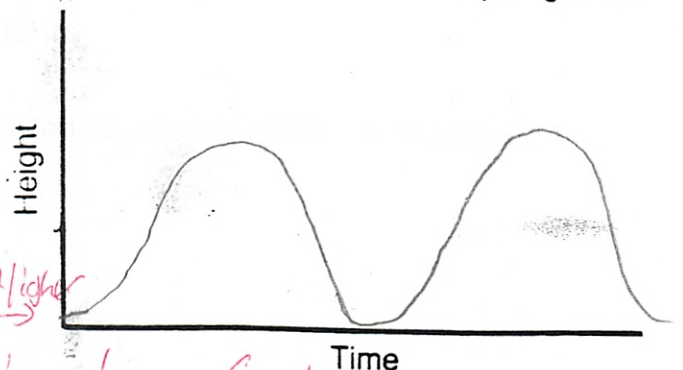
SKETCHING FUNCTIONS III

Make a sketch for each function described below. Use your knowledge of the relationships described.

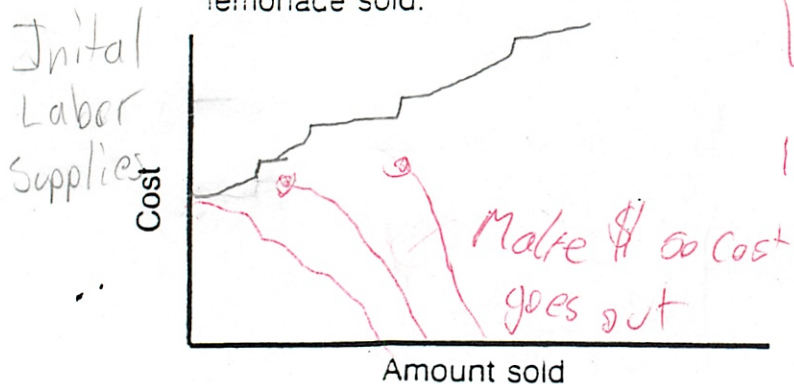
- (A) At a fixed price per ounce, the cost of buying gold is a function of the number of ounces you buy.



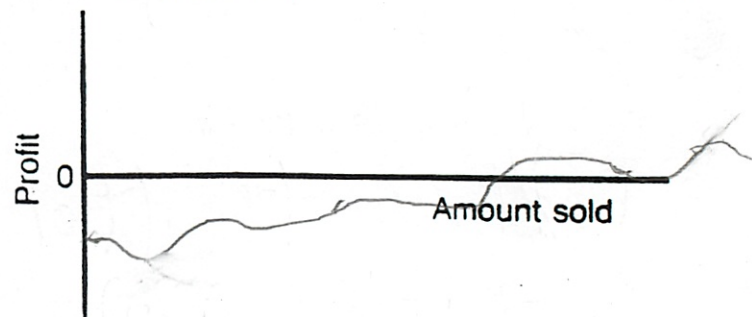
- (B) The height of your head above the ground as you ride a Ferris wheel is a function of the time since you got on.



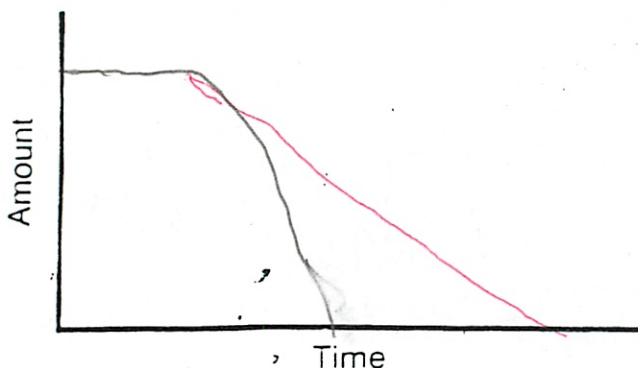
- (C) The total cost of operating a lemonade stand is a function of the amount of lemonade sold.



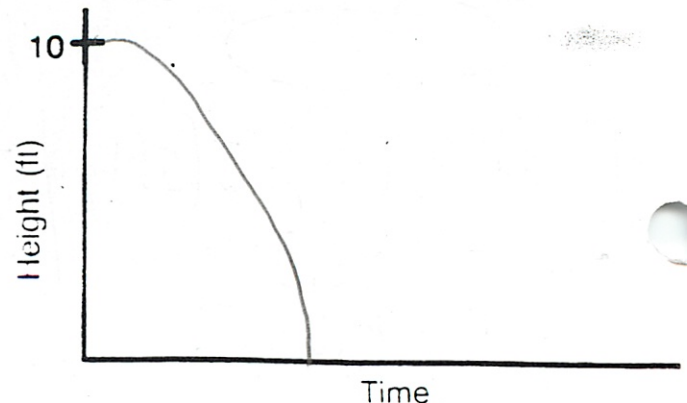
- (D) The profit from operating a lemonade stand is a function of the amount of lemonade sold.



- (E) The amount of water in a pan on a burner that is turned on "high" is a function of the time since the burner was turned on.



- (F) The height of a ball that is dropped from a height of 10 feet is a function of the time since it was dropped.



Expressions

4.2

$$\begin{aligned} x &= 1.4 \\ y &= -.07 \\ z &= -.4 \end{aligned}$$

$$\begin{aligned} 1. & -3x^2 \\ & -3(1.4)^2 \\ & -3(1.96) \\ & -5.88 \end{aligned} \quad (\checkmark)$$

$$\begin{aligned} 2. & -2 - 3y - 2x \\ & -(-.4) - 3(-.07) - 2(1.4) \\ & .4 + .21 - 2.8 \\ & \cancel{.61} - 2.8 \\ & \cancel{.61} - 2.8 \\ & -2.19 \end{aligned} \quad (\checkmark)$$

Sign Error

$$\begin{aligned} 3. & x/y - 2^3 + (-2 - y) \\ & 1.4/-.07 - (-.4)^3 + (-(-.4) - (-.07)) \\ & -20 + .064 + (.4 + .07) \\ & -20 + .064 + .47 \\ & -20 + .534 \\ & -19.466 \end{aligned} \quad (\checkmark)$$

$$\begin{aligned} 4. & (x-2)^2 + 10x - 2z \\ & (1.4-2)^2 + 10(-.07) - 2(-.4) \\ & .36 - .7 + .8 \\ & .46 \end{aligned} \quad (\checkmark)$$

$$\begin{aligned} 5. & 4y + 2 \div 2 - 3x \\ & 4(-.07) + 2 \div (-.4) - 3(1.4) \\ & -.28 + 5 - 4.2 \\ & -9.2 - 2.8 \\ & -9.48 \end{aligned} \quad (\checkmark)$$

$$\begin{aligned} 6. & -2^2 - x - y^3 \\ & -(-.4)^2 - 1.4 - (-.07)^3 \\ & -.16 - 1.4 + .00343 \\ & -1.56 + .00343 \\ & -1.55657 \end{aligned} \quad (\checkmark)$$

$$\begin{aligned} & 3.43E-4 \\ & .000343 \\ & -4 \end{aligned}$$

More Expressions

4.3

$x = -\frac{1}{4}$
 $y = \frac{2}{3}$
 $z = -1\frac{1}{2}$

1. $-3x^2 - 3(-\frac{1}{4})^2 - 3(\frac{1}{16})$
 $(-\frac{3}{16})$ ✓

2. $-2 - 3y - 2x$
 $-(\frac{1}{2}) - 3(\frac{2}{3}) - 2(-\frac{1}{4})$
 $1\frac{1}{2} - 2 + \frac{1}{2}$
 $-\frac{1}{2} + \frac{1}{2}$
 0 ✓

6. $-2^2 - x - y^3$
 $-(-1\frac{1}{2})^2 - (-\frac{1}{4}) - (\frac{2}{3})^3$
 $-2\frac{1}{4} + \frac{1}{4} - \frac{8}{27}$
 $-2\frac{2}{27}$
 $(-2\frac{2}{27})$ ✓

3. $x/y + -2^3 + (-2 - y)$
 $-\frac{1}{4} / \frac{2}{3} + -(-1\frac{1}{2})^3 + (-(-1\frac{1}{2}) - (-\frac{2}{3}))$
 $-\frac{3}{8} + 3\frac{3}{8} + (1\frac{1}{2} + \frac{2}{3})$
 $3\frac{5}{8} - 1\frac{1}{2}$ ✓

4. $(x-2)^2 + 10x - 22$
 $(-\frac{1}{4} - 2)^2 + 10(\frac{2}{3}) - 2(-1\frac{1}{2})$
 $(-2\frac{1}{4})^2 + 6\frac{2}{3} + 3$
 $5\frac{1}{16} + 9\frac{2}{3}$
 $14\frac{35}{48}$ ✓

5. $4x + 2 \div z - 3x$
 $4(\frac{2}{3}) + 2 / (-1\frac{1}{2}) - 3(-\frac{1}{4})$
 $2\frac{2}{3} - 1\frac{1}{3} + \frac{3}{4}$
 $1\frac{1}{3} + \frac{3}{4}$
 $2\frac{1}{12}$ ✓

$\frac{3}{4}$

2 signs
Error

?
calc wrong

Name Michael Plasme'er

Bubble gum worksheet

Date 3/7

1. Make a graph for the number of pieces of bubble gum needed in a marking period. Use appropriate labels and numbers. PLAN AHEAD!
2. Draw the line of best fit.
3. Indicate the number of pieces of bubble gum needed for 17 students.
4. Find the equation of the line of best fit.

know x , so use table

# of Students	# of Pieces
5	575
8	850
11	1100
9	875
4	500
7	750
11	1025
6	625

x = gum

x = students

3000 gum for _____ students

Use y_2 as 3000 + get intercept

= 34.56

Bubble Gum

3/7

$$31475$$

$$4.6 \left(\begin{matrix} (7, 750) \\ (9, 975) \end{matrix} \right) \left. \vphantom{\begin{matrix} (7, 750) \\ (9, 975) \end{matrix}} \right\} 115$$

$$\frac{115}{2} \quad 57\frac{1}{2} X$$

$$750 = 57\frac{1}{2}(7) + b$$

$$750 = 402.5 + b$$

$$347.5 = b$$

$$y = 57\frac{1}{2}x + 347.5$$

Calc:
1548.7

Calc =

$$y = 81.20 + 162.34$$

must y-intercept
be 0?

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

Students

Name _____

Date _____

Mr. Trabosh was at the Flyers Wives Carnival on Sunday at the First Union Center. He was standing in line to buy a t-shirt and a soda. For some reason the prices were not posted. All Mr. Trabosh knows is what the two people in front of him bought:

(a) 2 shirts + 3 drinks = \$48.45

(b) 3 shirts + 1 drink = \$59.55

- 1) Using X for the cost of one soda and Y for the cost of one shirt, write an equation for a and b.

(a) $3x + 2y = 48.45$

(b) $x + 3y = 59.55$

$$\begin{array}{r} 3x + 2y = 48.45 \\ -3x \\ \hline \end{array}$$

$$\frac{2y}{2} = \frac{48.45 - 3x}{2}$$

$$y = 24.225 - 1.5x$$

- 2) Write each equation in #1 in the form $y =$.

(Hint: you will need to use parentheses)

(a) $y = -1.5x + 24.225$

(b) $y = -\frac{x}{3} + 19.85$

- 3) Use a calculator and graph your equations from #2.

a) Make sure all Plots are off.

b) You might have to adjust your window also.

- 4) Find the point of intersection.

$x = 3.75$ $y = 18.60$

- 5) BRIEFLY explain what the point of intersection represents.

The cost of 1 shirt + Soda
to get standard form,
subtract or add 1 variable (x)
from 1 side to another
then divide x to 1 on both sides

$$x + 3y = 59.55$$

$$-x $$

$$\frac{3y}{3} = \frac{59.55 - x}{3}$$

$$y = 19.85 - \frac{x}{3}$$

Name Michael Plasmer

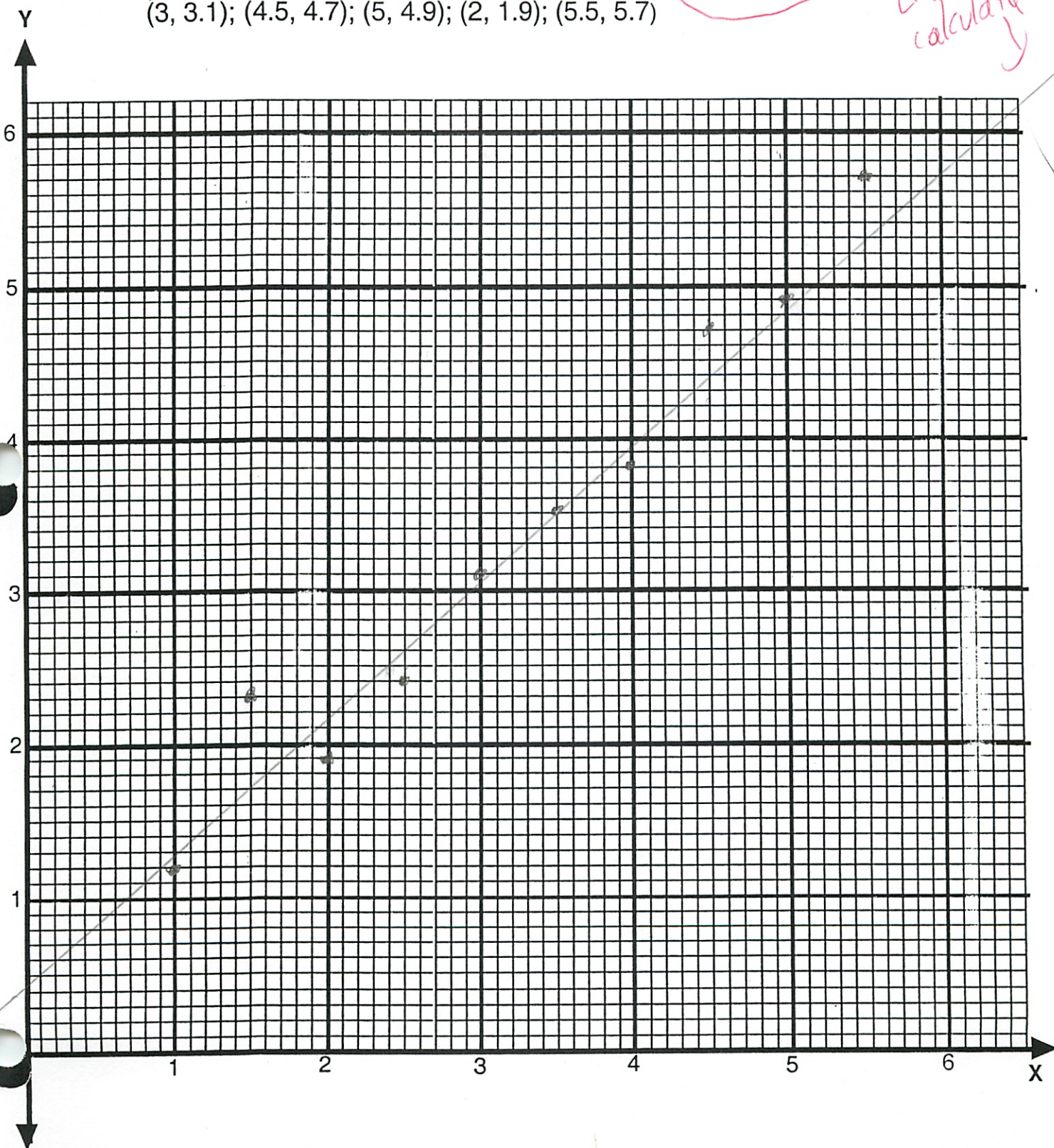
IMP 1 Scatter Plots Worksheet

- **Construct** a scatter plot that shows the data given below.
- **Estimate** a "best-fit" line. an equation for this data. $\times 2$
- **Use** your TI-83 Plus to calculate the best line for the data.
- **Write**, in detail, the steps you took when using the calculator.

Slope = Negative
Line is decreasing

Line not calculated

DATA: (1, 1.2); (1.5, 2.3); (3.5, 3.5); (4, 3.8); (2.5, 2.4);
(3, 3.1); (4.5, 4.7); (5, 4.9); (2, 1.9); (5.5, 5.7)



Scatter Plot

$$\begin{matrix} & +1.5 \\ (2, 1.9) & (2.5, 2.4) \\ & +1.5 \end{matrix}$$

$$\frac{.5}{1.5} = \boxed{y = x - .1}$$

$$1.9 = x(2) + b$$

$$\begin{matrix} 1.9 & = & 2 & + & b \\ -2 & & -2 & & \end{matrix}$$

$$\boxed{-1 = b}$$

$$\boxed{y = x - .1}$$

$$\begin{matrix} & -.3 \\ (3.5, 3.5) & (4, 3.8) \\ & +.5 \end{matrix}$$

$$\frac{.3}{1.5} = \boxed{\frac{3}{5}x}$$

$$3.5 = \frac{3}{5}(3.5) + b$$

$$\begin{matrix} 3.5 & = & 2.1 & + & b \\ -2.1 & & -2.1 & & \end{matrix}$$

$$\boxed{1.4 = b}$$

$$\boxed{y = \frac{3}{5}x + 1.4}$$

Stat

1

Enter Points

Window

0

Enter

6.5

Enter

Enter

Enter

6.2

2nd Stat Plot

Enter

Down

Down

2nd

1

Graph

~~Stat~~

Stat

Right

1

Enter

40

Vars

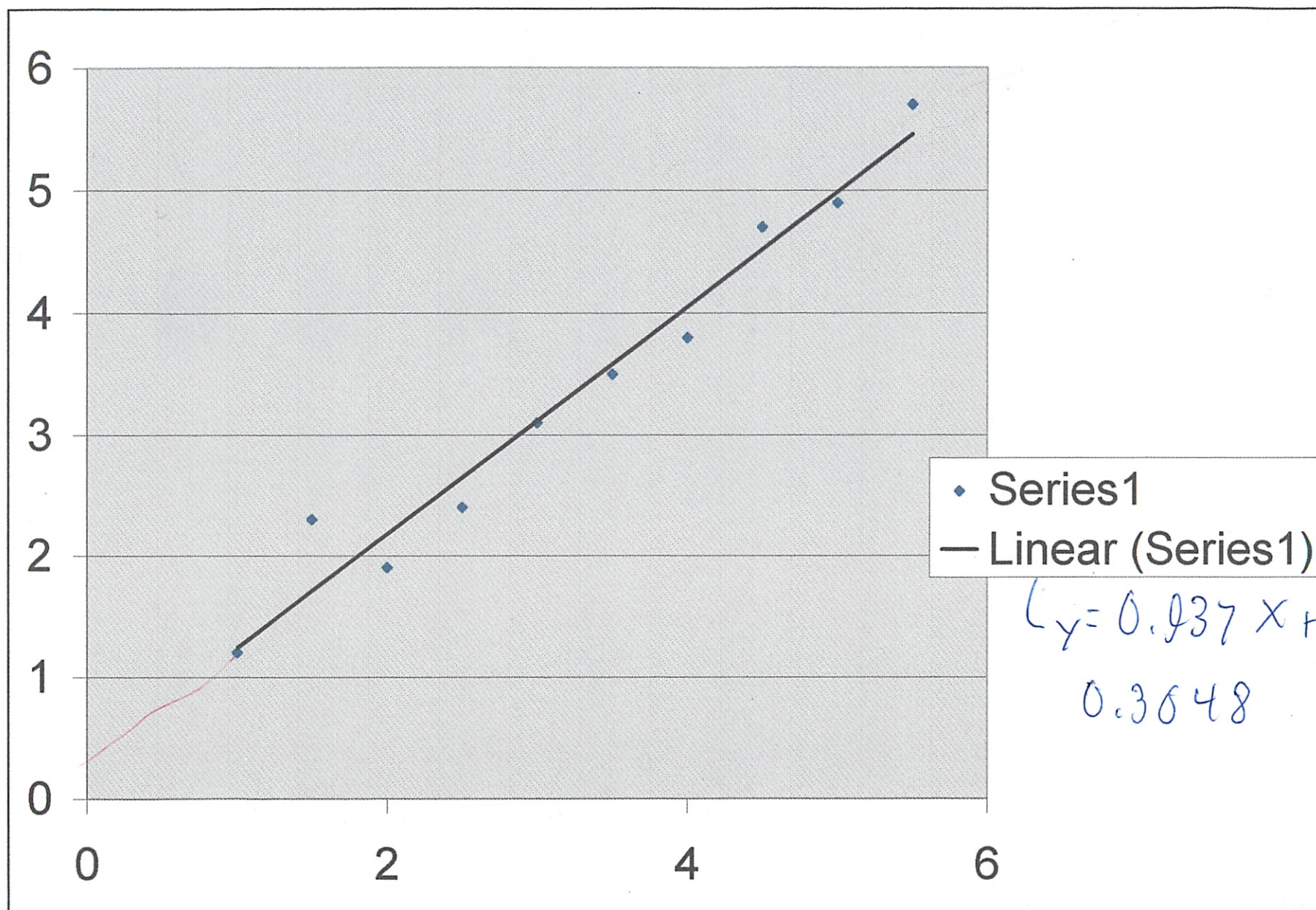
~~1~~ 5

Right

Right

Enter

Graph



Evaluate each algebraic expression. SHOW ALL WORK!

1) $-x^2 - 3x - 6$ when $x = -3$

$$-(-3)^2 - 3(-3) - 6$$

$$-9 + 9 - 6$$

$$\boxed{-6} \checkmark$$

2) $-3(2x - 5)$ when $x = -5$

$$-3(2(-5) - 5)$$

$$-3(-10 - 5)$$

$$-3(-15)$$

$$\boxed{45} \checkmark$$

check it

3) $3x^2 - 4x + 10$ when $x = 7$

$$3(7)^2 - 4(7) + 10$$

$$3(49) - 28 + 10$$

$$147 - 18$$

$$\boxed{129} \checkmark$$

4) $\frac{5(4x + 2)}{2 - 3x}$ when $x = -4$

$$\frac{5(4(-4) + 2)}{2 - 3(-4)}$$

$$\frac{5(-16 + 2)}{2 + 12}$$

$$\frac{5(-14)}{14}$$

$$\frac{-70}{14}$$

$$\boxed{-5} \checkmark$$

(forgot negative)

- 5) A plane is flying at 3,000 feet. It begins to descend at a rate of 300 feet per minute. Write an equation in terms of d feet and t time for the descent of the plane.

Equation = $d = -300t + 3,000$

How long did it take for the plane to land? 10 min

known = 0

$$0 = -300t + 3000$$

$$-3000 \quad -3000$$

$$\frac{-3000}{-300} = \frac{-3000}{-300}$$

$$10 = t$$

- 6) Scuba Dan descends at a rate of 8 feet per second. Write an equation in terms of d distance and t time for his descent.

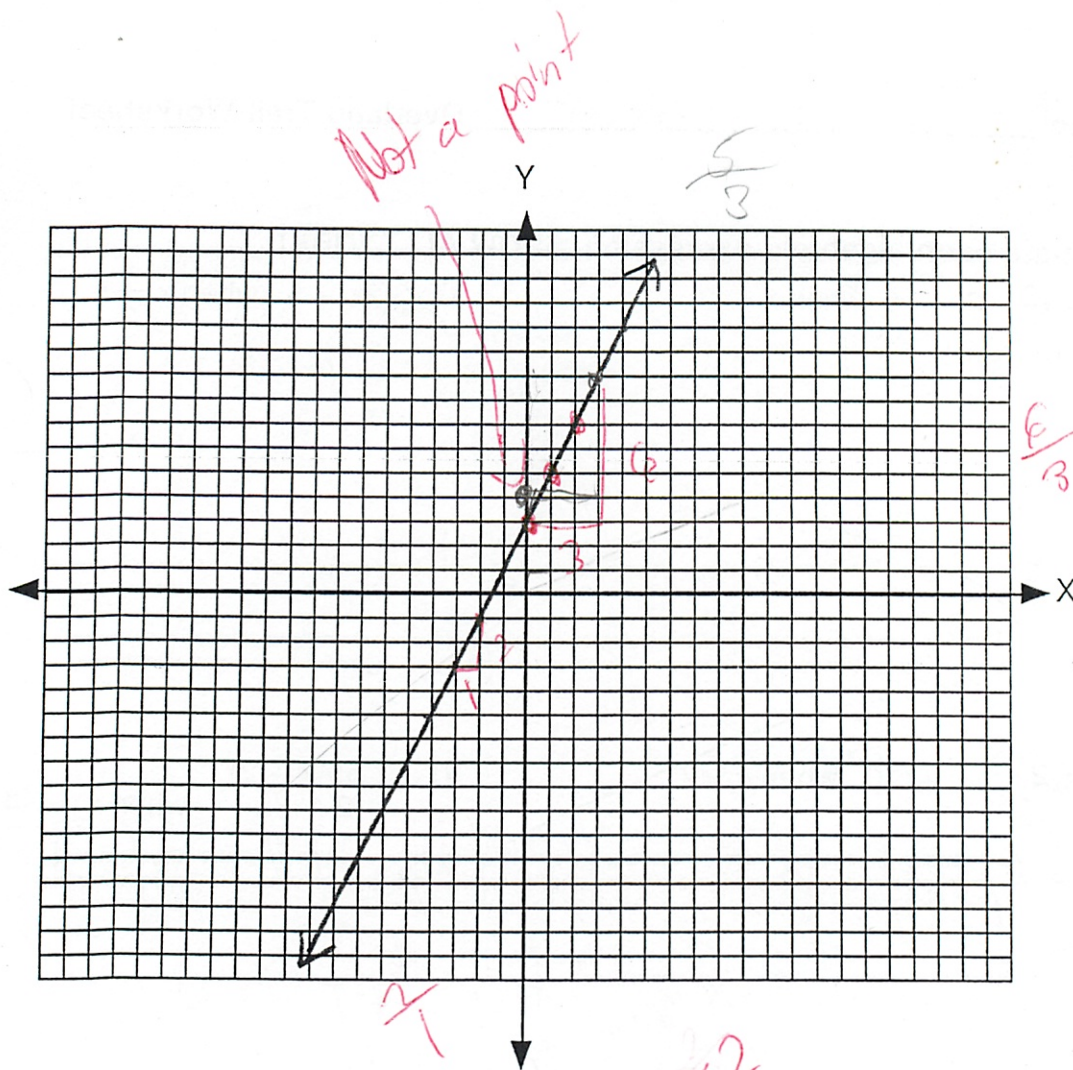
Equation = $d = -8t + 3000$

After 8 seconds where is Dan?

64 ft below what he started w/
or at 2936 ft

~~known $t(x) = 8$~~
 ~~$d = -8(8) + 3000$~~
 ~~$d = -64 + 3000$~~
 ~~$d = 2936$~~

No - he is scuba not sky diving



7) Write the equation for the line graphed above. $y = \frac{2}{3}x + 3$

8) What is the y-intercept? 3

9) What is the x-intercept? -1.5

10) Is the slope of the line positive or negative? positive

From #5

A new plane took off as ours started to descend. It ascends at 200 ft per min.

$$d = 200t + 3000$$

$$200t + 300t + 3000$$

$$500t = 3000$$

$$t = 6 \text{ minutes it took}$$

Overland Trail Test

Name Michael Plasmeier

Date 3/30

Read all directions carefully!

Evaluate each algebraic expression.

1) $4(2x + 5)$ when $x = -5$

$$4(2(-5) + 5)$$

$$4(-10 + 5)$$

$$4(-5)$$

$$= -20$$

2) $2x^2 + 4x - 10$ when $x = 7$

$$2(7)^2 + 4(7) - 10$$

$$2(49) + 28 - 10$$

$$98 + 18$$

$$116$$

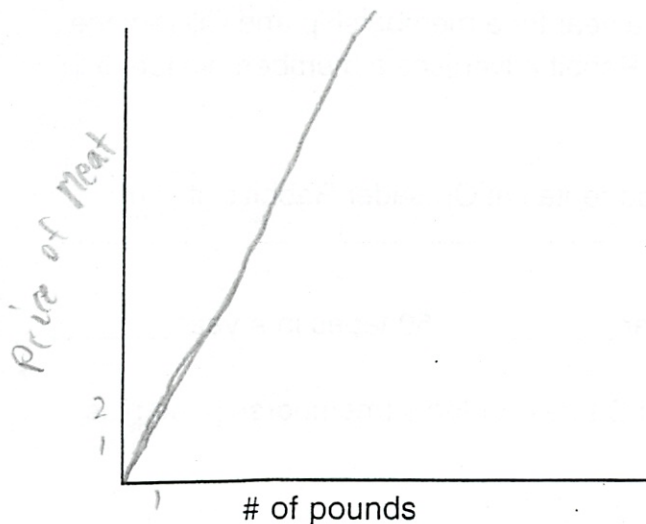
$$(40)(100x) + (1600/x) + (14x + x) + 4x$$

$$8848$$

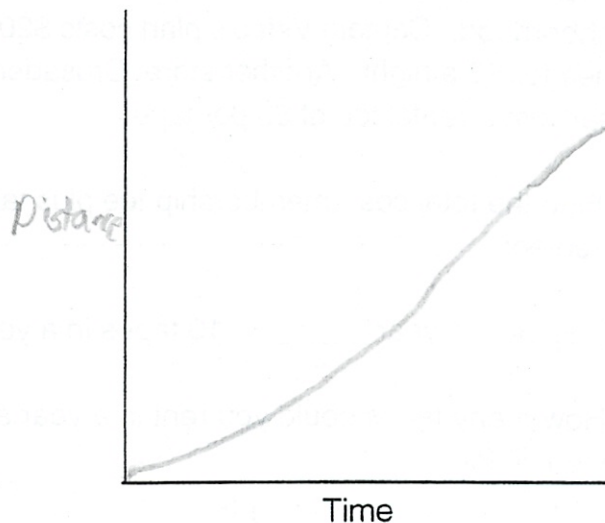
$$\frac{78}{50} + 1$$

Graph each of the following situations.

- 3) At a fixed price per pound, the cost of lunch meat is a function of the number of pounds you purchase.



- 4) The distance traveled by a car which is accelerating from a stop light.



Circle the correct answer.

- 5) If $x = y = -1$, then what is the value of $3(x+y) - (3x - y)$?

a) -8

b) -4

c) -3

d) -2

e) 2

$$3(-1 + -1) - (3(-1) - (-1))$$

$$3(-2) - (-3 + 1)$$

$$-6 - (-2)$$

- 6) If it takes a half hour to wash a car, how many days will it take to wash 96 cars?

a) 2

b) 6

c) 12

d) 24

e) 48

$$-6 + 2$$

$$-4$$

- 7) Jill's car has a 12 gallon tank and uses one gallon of gas for every 25 miles. Pete's car has a 15 gallon gas tank. If he drives as far as Jill on one tank of gas, how many miles per gallon does Pete's car get?

a) 12

b) 15

c) 20

d) 25

e) 30

3000 Jill

Answer the following questions using the situations described below.

Submarines are best known as warships, but they are also used for research and engineering in deep ocean locations. Suppose such a submarine descends from the ocean surface at a rate of 45 meters per minute.

8) Write a rule giving the submarine's location in meters D , after T minutes. Use negative numbers to indicate location below the surface.

Rule $D = -45T$

9) Find the submarine's location after 35 minutes. 1575 m below sea level

We want to rent some Nintendo tapes from a video store. There are two stores in the neighborhood. Captain Video's plan costs \$20 a year for a membership and will rent the games for \$2 a night. Another store, Crusader Rabbit advertises a membership fee of \$5 a year with a rental fee of \$3 per tape.

$$y = 2x + 20$$

$$y = 3x + 5$$

10) Find the total cost (membership fee plus tape rental) at Crusader Rabbit's if you rented:

5 tapes in a year \$20 10 tapes in a year \$35 50 tapes in a year \$155

11) How many tapes could you rent in a year at Captain Video's (membership fee plus tape rental) for:

\$32 6 tapes \$50 15 tapes \$100 40 tapes

12) Write a rule for the total cost of renting n tapes for each of the rental stores. Let t represent your total cost and n represent the number of tapes rented.

Captain Video's $t = 2n + 20$

Crusader Rabbit $t = 3n + 5$

13) Using graph paper construct **one** graph showing the costs from both stores.

14) If you planned to rent 35 tapes, which store would you rent from? Explain your reasoning.

I would rent from Captain where I would spend \$96, compared to \$110 at Rabbits

15) When are both plans identical? (number of tapes rented and total cost are the same for both stores)

At 15 tapes rented for \$50

Ms Kelly started a business 5 years ago. In the first year of her business she had 15 employees. In the second year she had 22 employees. The third year she had 26 employees, and in the fifth year she had 32 employees.

Ms Kelly asks you to predict the number of employees she may need in her tenth year of business.

16) How many employees will you tell her?

17) What equation did you use for the above prediction?

Explain how you arrived at your equation.

I used the stat editor to find line of best fit

1st, I typed in data in Stat Editor

2nd, Hit: Stat → 4 Enter Y= Vars [E] → → Enter

Mike and Paul are both traveling to New York City from Philadelphia. Mike left at 9 A.M. and arrived in New York City at 11:30 A.M. He averaged 50 mph during his trip. Paul left for New York City a half hour after Mike.

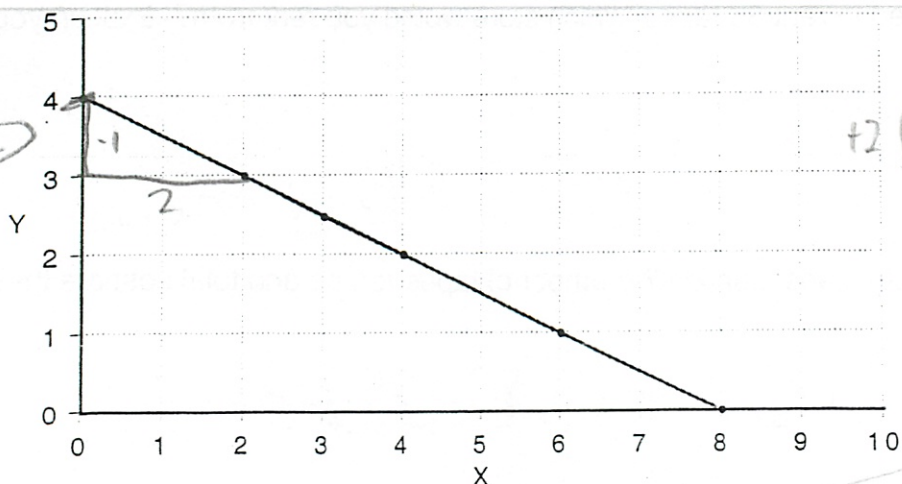
18) If he wants to arrive in New York City at the same time as Mike, what rate of speed must he average during his trip? **Show all your work and reasoning clearly.**

It took 2.5 hrs for Mike

Paul only has 2 hrs to go 125 miles $(50 + 50 + (50/2))$

$125 / 2 = 62.5$ miles per hour

2



$$+2 \left(\begin{matrix} (2, 3) \\ (4, 2) \end{matrix} \right) - 1$$

$$= -\frac{1}{2}x$$

$$2 = 4 \left(-\frac{1}{2} \right) + b$$

$$2 = -2 + b$$

$$+2 \quad +2$$

$$4 = b$$

19) Using the above graph, find the equation (rule) for the line graphed. **Show all your work clearly.**

$$-\frac{1}{2} \text{ (Rise over run)}$$

$$y = -\frac{1}{2}x + 4$$

I counted the rise over run from 1 pt. to another and I saw the line crossed the y axis at 4.

20) What is the y intercept for the line above?

(0, 4)

21) What is the x intercept for the line above?

(8, 0)

22) Is the slope of line positive or negative?

negative

+1 point is for using an ordered pair to express 20+21

Michael Plasmeier

