Book 1

STAPL

1-subject no

1-materia cuad

Math

Michael Plasmeier

HR 216

Qu 2

Date	Quiz/Test	Title	Possible	Have	Average
12/1	Quiz	Equations	50	50	100%
12/5	Test	Equations of Lines	100	100	100%
12/19	Quiz	Decision Making	45	45	100%

÷ of Decimals

9/5

Review

32.724 ÷ 0.12

- Move decimal point over the same amount on both sides to the right
- Move Decimal point in every place value
- Divide

$$0.12 \overline{)\,32.724}$$

$$12 \overline{)\,3272.4}$$

$$\begin{array}{r} 272.7 \\ 12 \overline{)\,3272.4} \\ -24000.0 \quad | \; 2000.0 \\ \hline 872.4 \\ -840.0 \quad | \; 70.0 \\ \hline 32.4 \\ -24.0 \quad | \; 2.0 \\ \hline 8.4 \\ -8.4 \quad | \; 0.7 \\ \hline 0 \end{array}$$

Review of Fractions

9/5

$8\frac{3}{4} \div 2\frac{1}{7}$

- Take out whole number (make Improper)
- Flip the 2nd fraction
- Change the ÷ sign to x
- Multiply Fractions
  - Reduce
  - Multiply numerators + denominators
  - Turn back to mix number

$\frac{35}{4} \div \frac{15}{7}$

$\frac{35}{4} \div \frac{7}{15}$

$\frac{\cancel{35}^{7}}{4} \times \frac{7}{\cancel{15}_{3}}$

$\frac{7}{4} \times \frac{7}{3} = \frac{49}{12}$

$\frac{49}{12} \rightarrow 4\frac{1}{12}$

Math

Comparing Quantities

Comparing Quantities p1

9/8

#1 Bartering - starts: w/ 2 sheep + goat
Goal: corn
Can trade: 1 salt = 2 chicken
2 corn = 3 salt
6 chickens = 1 goat
6 salt = 1 sheep

Other combos: 12 salt = 2 sheep
8 corn = 12 salt
~~1 goat = 6~~
6 chicken = 3 corn

Steps: 2 sheep + 1 goat
12 salt + 1 goat
8 corn + 1 goat
8 corn + 6 chickens
8 corn + 3 salt
8 corn + 2 corn
= 10 corn

Paulo gets 10 bags of corn for 2 sheep and 1 goat.

Comparing Quantities
p2

9/8

#2 · Bananas Pan Balance · combos - 10 bananas = 2 pineapples
1 pineapple = 2 bananas
1 apple = (?) bananas

10 b = 1 p

Work - 5 bananas = 1 pineapple
2 b + a = 1 p
2 b + a = 5 b
a = 3 b

One apple equals three bananas.

#3 Combos - 6 carrots = 1 corn + 1 pepper
1 corn = 2 peppers
1 pepper = (?) carrots

explanation

Work 6 ca = 1 co + p
6 ca = 2 p + p
6 ca = 3 p
2 ca = 1 p

2 carrots equal one pepper

Comparing Quantities

p2 9/8

#4 - Thirst Quenchers - Comboes - 6 mugs (or cups) = 1 glass + 1 glass (Eaches)

2 g = 1 p

Alson Noen 4 p = 1 big

Work: 6 m = 1g + 1p

6 m = 1g + 2g

6 m = 3g

2 m = 1g

16 m = 8g

16 m = 4p

4p = 1b

16 m = 1b

16 mugs or cups eavalls the big bottle.

#5 - Tug-of-War - Comboes - 4 oxen = 5 horses

1 elephant = 1o + 2h

Goal: Which is stronger

1e + 3h ≠ 4b

Work: 1e + 3h = 4b

1o + 2h + 3h = 4b

1o + 5h = 4o

1o = 0

The left side is stronger by the power of 1 oxen. This is because if you change the elephant you have 1 oxen and five horces against 4 oxen. Five horses 'eavall 4 oxen so they are removed leaving 1 oxen on the left

Comparing Quantities

p 4

6-10 Info

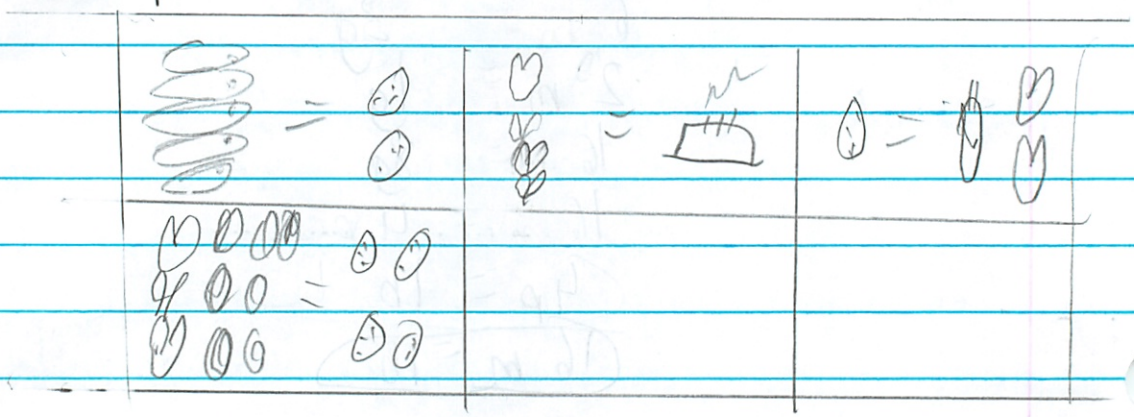
5 fish = 2 mellons

4 apples = 1 bread

1 m = 1 corn + 2 a

10 a = 4 m

#6 Draw picture of above info



7 Skipped

#8 Is 10 a = 10 f, true? (Yes)

Work = 10 a = 4 m

4 m = 10 f

Yes, it is correct.

#9 Is 3f = 1b true?

Work: 3f = ?

No, she can't trade fish 3 fish

#10 Goal: Get corn from fish

Work: 5 f = 2 m

2 m = 2 c + 2 a

She can trade 5 fish for 2 mellons, and trade the 2 mellons for 2 ears of corn and 4 apples.

Comparing Quantities

p5

9/9

Section B

#1-16 The School Store- Facts: Eraser = 25¢
Pencils = 15¢

#1 The School Store $1.10 was bought

Answer 2 erasers = 50¢
4 pencils = 60¢
Total = $1.10

#2 $1.50 was bought, They can't decide what was bought

Answers 6 erasers $1.50 or
10 pencils $1.50 or
5 pencils + 3 erasers $1.50

Real answer: They can't decide what was bought because their are three possible answers.

#3 Find another almost where you don't know what was bought?

Answer: 75¢ - 3 erasers or 5 pencils
: $1.75 - 5 pencils or 4 erasers
75¢ is a number that can be multiple answer

Comparing Quantities

p6

9/8

#4 Compete the chart

Eraser	Price	Pencils	price
0	$0	0	$ 0
1	$ .25	1	$ .15
2	$ .50	2	$ .30
3	$ .75	3	$ .45
4	$ 1.00	4	$ .60
5	$ 1.25	5	$ .75
6	$ 1.50	6	$ .90
7	$ 1.75	7	$ 1.05

#5 $1.05

The box could have 7 pencils and no erasers.

6 How do you put both data in on chart.

A. You can maby make a graph.
B. But that wont work you could only show one.
A. Why not start in the upper corner and work like this! Pencil 15 30 45 Eraser

B. Thats something like a combination chart, but the data starts on the other corner.
A. that there is a good idea ill try that.

cont on 2nd to

Comparing Quantities

p 4

9/9

Flashback

#18 try to get all corn

Fact start w/ any fish

- need all corn
- trade 5 fish = 2 melon
  4 apple = 1 bread
  1 melon = 1 corn + 2a
  1 a = 4m

50
20
25
26
10

Work

12.5
25
37.5
50
62.5
75

50 f = 15 m
15 m = 15 c + 30 a
10 c + 20 a = 8 m + 35 c
25 c + 8 = 15 c + 8 c + 16 a
8 = 8 c + 3a

10 f
26 m
20 c + 40 a
20 c 4 m
24 c 8a

Answer:

10 f = 4 m
4 m = 4 c + 8 a
4 m = 10 f
10 f = 10 a
4 a = 8 c
10 a = 4 c + 8 a
2 a = 4 c
1 m = 1 c + 4 c
1 m = 5 c 5 c = 10 c
2 m = 6

10 f = 8 m
8 m = 8 c + 32 a
8 a + 16 a = 8 c
x 2 m
x 2 m = x 2 + x 4
60

2.5
10 m = 10 + 20 a
10 c + 8 m
8 c 16 a

Comparing Quantities

#7

9/10

#7 The School Store:- Pencils cost 15¢, Erasers 25¢

A. What does 40 mean on chart?

Answer: 40 means 40¢ was paid for one pencil + eraser.

B. On the top chart how many can they fit.

They can only fit 16 on the small chart, it needs to be bigger.

#8. See Student activity sheet 1.

#9 See Student activity sheet 1.

+25

? +15

+10 +40

Comparing Quantities

p8

9/10

#10 The School Store - Pencils 15¢, Erasers 25¢

A# Where is 110¢ on chart

It is right above the circled block.

B. How many erasers or pencils for 110¢.

It is 2 erasers and 4 pencils

#11

A. When you move Diagnaly left on the chart, what is the increase?

The number increases by 40¢. when it moves diagonly left.

B Is the answer to 11A different depending on each arrow?

No their is no difference.

#12 What does moving along an arrow mean in terms of pencis + eraser purched.

It means that different amount has been purched, eather more or less.

Comparing Quantities

p 8

#13 The School Store

A: Mark on your chart (Student Activies Sheet 1) a move that represents the exchange of one pencil for an eraser

Answer: See Student Activity Sheet 1

B: How much is that cost?

The cost is 10¢.

#14

A: Mark on the chart (Student Activity Sheet 1) a move for giving one eraser for two pencils.

See Student Activity Sheet 1

B. How much does that cost.

It costs 5¢ for the move.

#15

A: Describe the move shown on chart A (Comparing Quantities page 8)

The move is giving up a eraser and getting a pencil.

Comparing Quantities

p8

9/18

#15 The School Store

B. Describe the move on chart B (Comparing Quantities p8)

The move is giving a pencil and getting 2 erasers.

Comparing Quantities

9/1

p12

24-25 Renting Canoes - Facts

small carries 2
large carries 3

#24 25 people are going. What are the possibilit

Work: See Student Activity Sheet 2

Answer: The 25 people can rent 11 small and 1 big, or 8 small and 3 big, or 5 small and 5 big, or 2 small and 7 big.

#25 24 people are going now.

Work: See Student Activity Sheet 2

Answer: The 24 people can can fit in 12 small and 0 big, or 9 small and 2 big, or 6 small and 4 big, or 3 small and 6 big, or 0 small and 8 big.

Comparing Quantities
p 13

9/11

#26 Puzzles

A Complete puzzle on Student Activity Sheet 3

Explanation: Going left is +5, you can tell by 9-5. Now you know that going up is +8. You now fill in the other boxes. 24 is the answer.

B. Explanation: You can tell from the 27 and 37 that going up is +10. You then extended and add 10 and 20. You can now see from the 20 and the 27 that going right is +7. Now you can go right to find the circle which is 21.

C Explanation: I started with the 20 and the 24 to see that going diagonal up left means you subtract 4. Then I got the 12. I then devide the 12 by 4 because their is 4 spaces under it. I then figured out that going up, you add 3. I then saw from the 9 and the 16 ~~take~~ that going right is +7. Then from the 28 I went up by 3 to get 34 as the answer

Comparing Quantities 9/11

p 13

#26 Puzzle - Student Activity Sheet 3

D Explanation: I found that 33 and 55 when going on a 2 right, one down diagonal you add 20. Then I had 75 and 5 spaces to move, so I figured that you need to move -15 when you go left. Then from 45 and 55 I saw that going up is +10, the let me fill in the rest of the chart going up from 60, to get 90 as the answer.

Comparing Quantities
p 33

9/11

~~Flash Forward~~

#14 School Fair - Loop-D- Loop five tickets
Whirlybird 2 tickets

#1 Make chart

# of Whirlybird Rides	Number of Tickets										
7	14	19									
6	12	17									
5	10	15	20								
4	8	13	18	23							
3	6	11	16	21	26						
2	4	9	14	19	24						
1	2	7	12	17	22						
0	0	5	10	15	20	25	30	35			
	0	1	2	3	4	5	6	7			

# of Loop-D Loop Rides

#2 How many for 2 Loop and 3 wrilybird?

16 tickets are needed.

#3 How can you spend exactly 19 tickets

You can do 7 Whirlybird and 1 Loop rides or 2 Wirlybirds and 3 Loop Rides for 19 tickets

Combination Chart
p33

9/11

Flash Forward

#4 School Fair

A. Mark on the chart giving Wirly bird for 2 Loop.

See Chart

B. What is the ticket chart?

You need 8 more tickets.

Comparing Quantities
p15

#1-3 Glasses = G
Shorts = S

2g + 1s $50
1g + 3s = $50

2g + 1s = 1g + 3s
1g = 2s

#1. What is more expensive.

1 pair of glasses is the same as 2 pairs of shorts. This means that glasses are more expensive because 1 pair of glasses equals 2 shorts.

#2 How many shorts for $50?

5 shorts, because 1 pair of glasses and 3 shorts are $50. Also 1 pair of glasses equals 2 shorts. Excange and get 5 shorts for $50

#3 Price of g?

$20, because 5 s = $50, so 1g = $10 and 2s = $20, 2s = 1g, so 1g = $20

Comparing Quantities

p 18

#12 Extension

Prices in dollars

# of Shirts	# of Glasses: 0	1	2	3	4	5	6
5	50	70	90	110	130	150	170
4	40	60	80	100	120	140	160
3	30	50	70	90	110	130	150
2	20	40	60	80	100	120	140
1	10	30	50	70	90	110	130
0	0	20	40	60	80	100	120

Glasses = $20

Shirts = $10

Comparing Quanties

p16

#4-7 $2u + 1c = \$80$ $1u = 1$ umbrella (price of)

$1u + 2c = \$76$ $1c = 1$ cap

$2u + c = 1u + 2c$

$2u + c = 1u + 2c + \$4$

$1u = 1c + \$4$

1 cap = \$24

1u = \$28

#4 What is more expencive.

An umbrella is more expencive because 1 umbrella is the same as a cap and \$4 dollers. So 1 umbrella is \$4 more than a cap. (pan ballance)

#6 Make a group of caps + find price

$1u + 2c = 76\$$

$1c + \$4 + 2c = 76\$$

$\$4 + 3c + \$76$

$3c = \$72$

$1c = \$24$

3 caps is the same as \$72

#7 What is price for 1 cap or umbrella

A cap is \$24 and an umbrella is \$28.

9/15

Comparing Quantities

p 18

11 Extension

Prices in dollers

# of Umbrella								
5								
4								
3	84							
2	56	80						
1	28		76					
0	0	24	48	72				
	0	1	2	3	4	5	6	

# of caps

↖ +4

↓ −28

→ +24

$ 28 = U

$ 24 = C

Yes the answer is the same.

Comparing Quantities

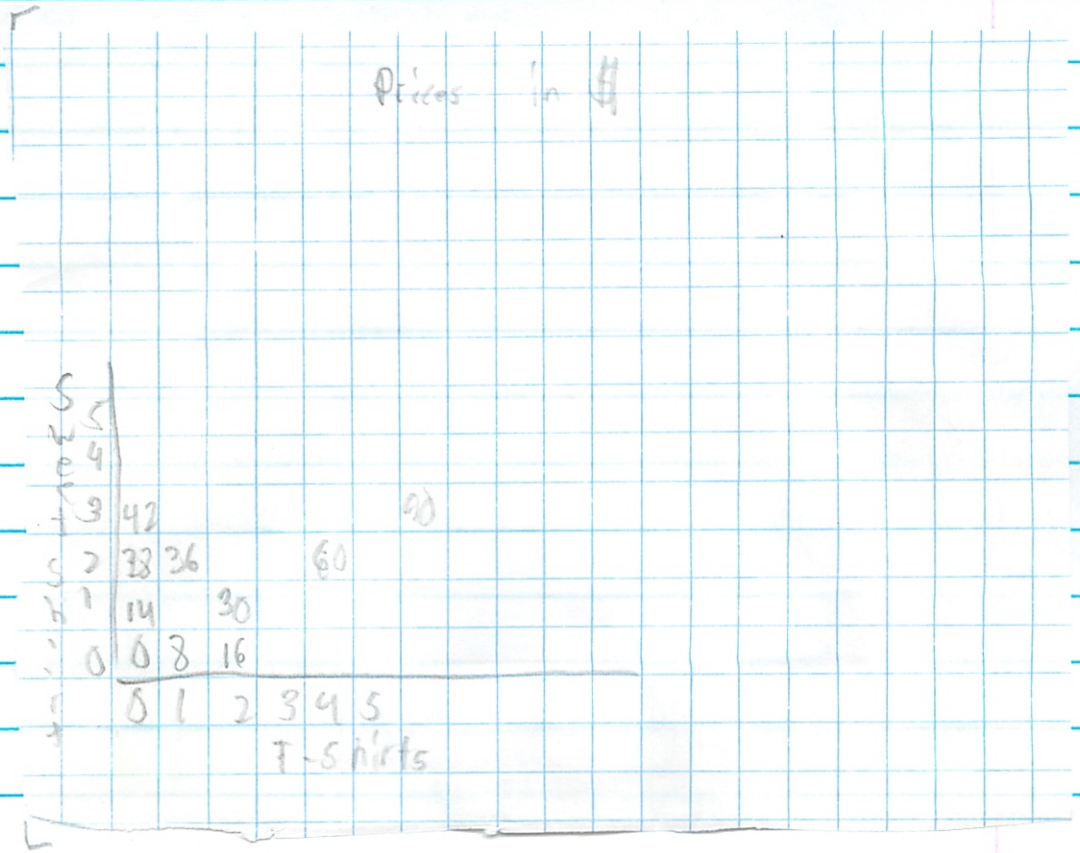
p17

9/16

#8 2 t-shirt + 1 sweet = $30

T + 6$ = S

Prices in $



Sweet shirt							
5							
4							
3	42						90
2	28	36			60		
1	14		30				
0	0	8	16				
	0	1	2	3	4	5	

T-shirts

↓ -30

↑ +6 - (know from trade)

↓ -42

→ +8

$3\overline{)42}$ = 14

28
14
2

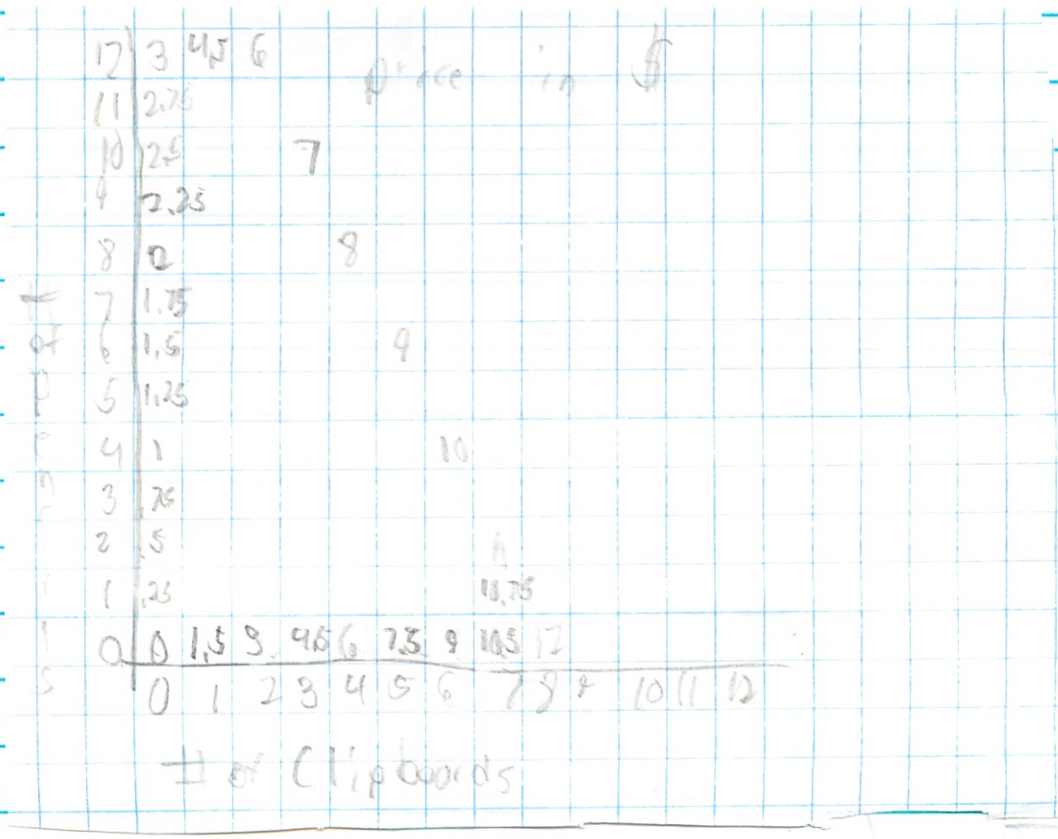
One sweetshir coats $14 and a t-shirt coasts $8. I used the chart to find the answer

Comparing Quantics

p17

#9-10 4 Clipboards + 8 pencils

3 c + 5 p = 7



↑ ← -1

← -1.5

↑ +.25

#9 Is 2 pencil = 1c

No, 2 p is 50¢ and a clipboa
is $1.5. 6 p = 1c

#10 Price of 1p and 1c

One pencil is 25¢ and a clipboa
is $1.5. I found this using the cha

Comparing Quantities

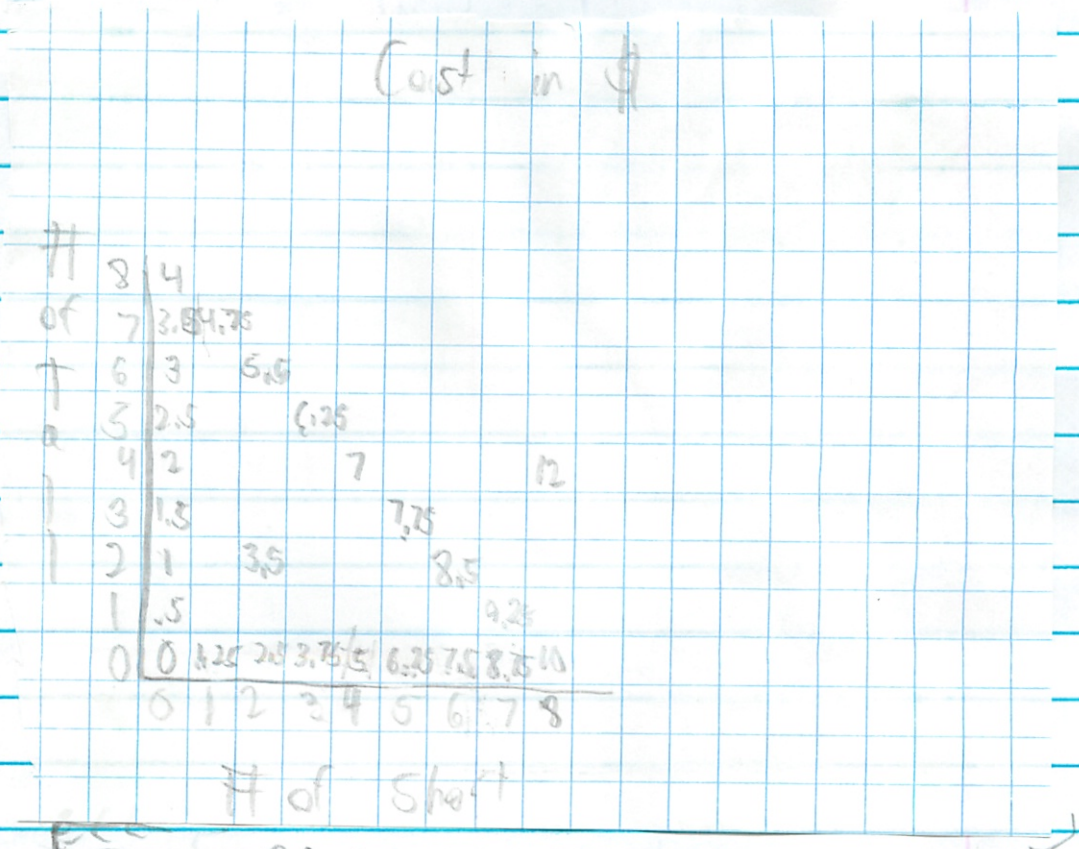
p 20

9/16

#17 Candles - 3 tall + 5s = 7.75

2t + 2s = 3.50

Cost in $



# of Tall									
8	4								
7	3.5	4.75							
6	3		5.5						
5	2.5			6.25					
4	2				7				12
3	1.5					7.75			
2	1		3.5				8.5		
1	.5							9.25	
0	0	1.25	2.5	3.75	5	6.25	7.5	8.75	10
	0	1	2	3	4	5	6	7	8

# of Short

- 4.25 ← Not needed

← 6

- 3.5

+ .75

- .5

→ + 1.25

4.75
3.50
1.25

7.75
3.50
4.25

7.75
.425
1200

1.2
10 | 8.20
.8
1.8 | 80
3
1.4
2
1.3
10.4

One tall candle is 50¢ and a short candle cost $1.25

Comparing Quantities
p21

9/17

#1-2 Chickens - S = weight, in kg, of small chicken
M = weight, in kg, of medium chicken
L = weight, in kg, of large chicken

$M + L = 10.6$ kg
$S + L = 8.5$
$S + M = 6.1$

$S + M + L = ?$

$M + L = 10.6$
$S + L = 8.5$
$M - S = 2.1$
$S + M = 6.1$
$2M = 8.2$
$M = 4.1$

$M = 4.1$
$L = 6.5$
$+ \quad S = 2$
$S + L + M = 12.6$

$L + M = 10.6$
$L + 4.1 = 10.6$
$L = 6.5$

$L + S = 8.5$
$6.5 + S = 8.5$
$S = 2$

#1 $S + M + L = ?$
A small, medium and large chicken weigh 12.6 kg.

#2 Value of each chicken. A large weighs 6.5 kg, a medium weighs 4.1 kg, and a small weighs 2 kg.

Composing Quantics

p 22

9/18

3-5 Maria's Restiraant - See Note book 1

#3 See Notebook 1

Order 4 cost $5, 5 cost $3, 6 cost $8, 7 cost $14 at Manisee

#5 Price of items?

See Note book 1

One drink cost $1, A Taco cost $2, and a salid is $1.50

Comparing Quantities

9/18

p 23

6-7 Chickens Revisited - Notebook 2

#6 See Note-book 2.

#7 See Notebook 2

Weight of small is 2 kg, medium is 4.1 kg, large is 6.5 kg.

Comparing Quantities

p24

9/10

#8 Burger World - Find prices - Notebook 3

The price for fries is $1, the price for a shake is $1.80, and the price for a burger is $2.40.

Comparing Quantities

p 25

9/22

#7-10 Flowers - See Notebook 4 + 6 + 7

Prices of each: A lily costs 70¢, a rose costs 90¢ and a mum costs 80¢.

#9 Make a group of Lillies, Roses, and mums that cost $10.

6 roses, 2 lillies and 4 roses cost $10.

#10. Make 3 Groups of 24 flowers.

You can have 2 roses, 16 lillys and 6 mums for 17.80. You can also get 12 roses, 4 lillys and 8 mums for $20. If you dont - like that, you get 18 roses and 6 lillies for 20 dollers and fourty cents.

Comparing Quantities

p 26

9/19

#11 Amusement Park - Find prices - Notebook 5

The coaster costs $1.70, the Whirling Wheel costs $1.80, and the Haunted House costs $2 to ride.

Comparing Quantities

Worksheet and p 33

9/23

(A) Review

2-4 Base ball cards - 2 Sams = 3 Hoopsters

3 Freddys = 4S

1 F = 1S + 2 Ritas

4 Jeans = 4 F

#2 Does 6 H = 3F?

Work - Start 2S = 3H

M2 4S = 6H

Flip 6H = 4S

6H = 3F

Yes 6 hoopsters equals 3 freddies.

#3 Does 1J = 2S?

Work 4J = 2F

x3 12J = 6F

12J = 8S

3J = 2S

No, 2 sams equal 3 Jeans.

Comparing Quantities

Worksheet p 33+34

9/23

#4 · Have 5 F, get R's.

5 F = 5 S + 10 R
5 F = 15 + 18 R + 3 F
5 F = 45 + 13 R
5 F = 13 R + 3 F
5 F = 35 + 16 R

You can get 16 Ritas for 5 freds

(B)

#5 · Puzzles

A

(3)					
2	10	18			
1	9				
0	8	16			

→ +8
↓ -1

b

75					
60					
45	51				
30	36	42	(48)		
15		27			
0					

↘ -24
↓ -15
→ +6

(C)

#1 ex 6

p34 Work Sheet

Store: 3 Shirt + 4 Caps = $96
2 S + 5 C = $99

S = price of T-shirt
C = price of Cap

See Next Page.

Comparing Quantics

Worksheet + p 34 + p35

B2 + 6
p34 Worksheet

A →

6

Prices in $

# of Shirts								
5			90					
4				93				
3					96			
2	24					99		
1	12						102	
0	0	15	30	45	60	75	90	105
	0	1	2	3	4	5	6	7

# of Caps

↓ -3
← -15
↑ +12

B The price of one cap is $15, and the price of a shirt is $12.

D Restrant - See Note book next page

#2 - 7
p35 Worksheet

Comparing Quantities

Worksheet and p 35

Fino's / Worksheet + p 35

Notebook

Line	Taco	Salad	Drink	Total	Move
1	1	1	2	3.00	
2	2	1	4	8.00	
3	0	4	4	11.00	
4	1	1	2	5.00	L2 - L1
5	0	1	0	2.00	L4 - L1
6	1	2	2	7.00	L4 + L5
7	2	4	4	14.00	L6 x 2
8	2	0	0	3.00	L7 - L3
9	1	0	0	1.50	L8 ÷ 2
10	0	0	2	1.50	L1 - L9
11	0	0	1	0.75	L11 ÷ 2
12					

Salad = $2.00

Taco = $1.50

Drink = $0.75

A Cost of salad

A salad cost $2.00

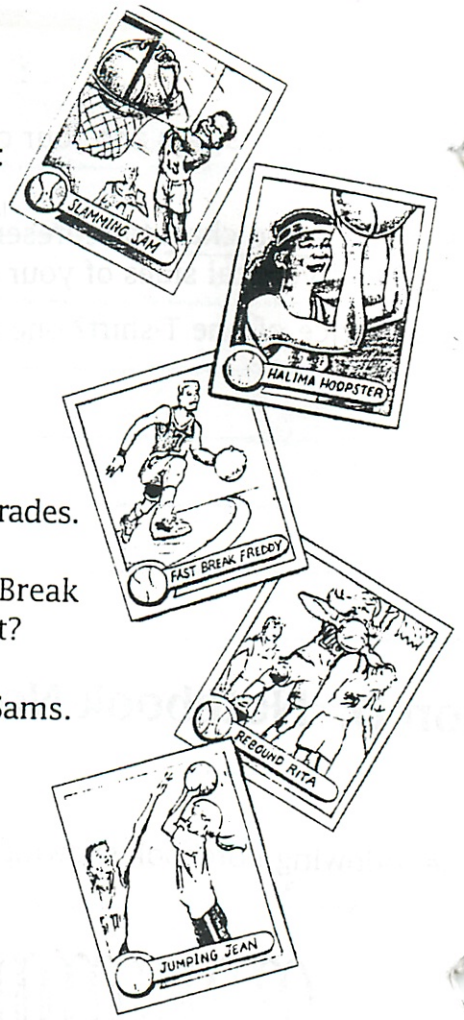
B Cost of taco and drink.

A taco cost $1.50 and a drink cost 25 ¢.

Section A. Compare and Exchange

Susan and her friends like to collect and trade basketball cards. Today after school, Susan made the following trades:

- two Slamming Sams for three Halima Hoopsters,
- three Fast Break Freddys for four Slamming Sams,
- one Fast Break Freddy for one Slamming Sam and two Rebound Ritas,
- four Jumping Jeans for two Fast Break Freddys.



1. Use the above information to make up two more fair card trades.

2. James offers Susan six Halima Hoopsters for three Fast Break Freddys. Should Susan make this trade? Why or why not?

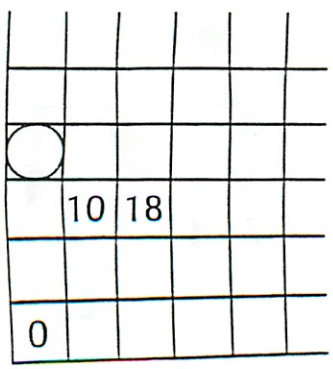
3. James then offers one Jumping Jean for two Slamming Sams. Should Susan make this trade? Why or why not?

4. Susan has five Fast Break Freddys. How many Rebound Ritas can she get for her Fast Break Freddys?

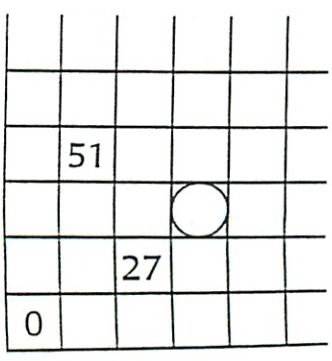
Section B. Looking at Combinations

For each of the following puzzles, find the number that goes in the circled box and explain your strategy.

a.



b.



Section C. Finding Prices

#6

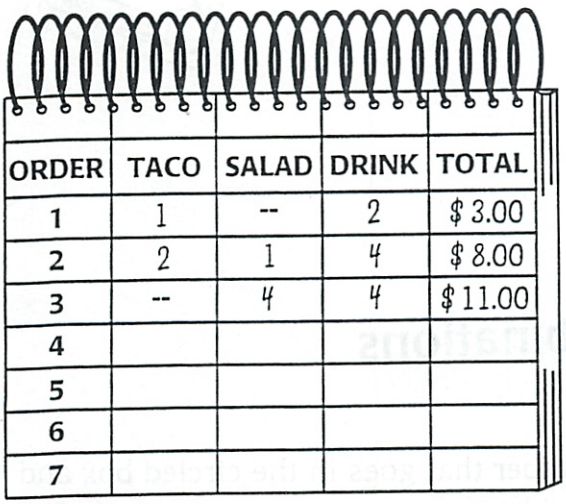
Robe[illegible]bought three T-shirts and four caps for $96. Anne bought two T-shirts and five caps for $99.

a. Make a combination chart to represent this information. Be sure to label the horizontal and vertical sides of your chart.

b. What is the price of one T-shirt? one cap?

Section D. Notebook Notation

Study the following notebook showing lunch orders at Gino's restaurant.



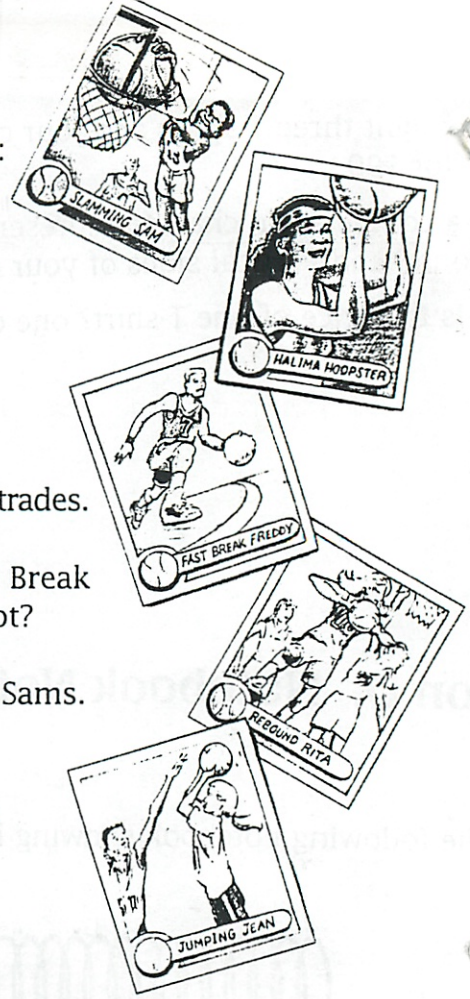
ORDER	TACO	SALAD	DRINK	TOTAL
1	1	--	2	$ 3.00
2	2	1	4	$ 8.00
3	--	4	4	$ 11.00
4				
5				
6				
7				

7

a. Find the cost of one salad. Explain how you got your answer.

b. How can you find the cost of one drink? one taco?

ection A. Compare and Exchange



usan and her friends like to collect and trade basketball
ards. Today after school, Susan made the following trades:

two Slamming Sams for three Halima Hoopsters,

three Fast Break Freddys for four Slamming Sams,

one Fast Break Freddy for one Slamming Sam and
two Rebound Ritas,

four Jumping Jeans for two Fast Break Freddys.

1. Use the above information to make up two more fair card trades.

2. James offers Susan six Halima Hoopsters for three Fast Break Freddys. Should Susan make this trade? Why or why not?

3. James then offers one Jumping Jean for two Slamming Sams. Should Susan make this trade? Why or why not?

4. Susan has five Fast Break Freddys. How many Rebound Ritas can she get for her Fast Break Freddys?

ection B. Looking at Combinations

or
each of the following puzzles, find the number that goes in the circled box and
ain your strategy.
plane

a.

○					
	10	18			
0					

b.

	51				
			○		
		27			
0					

Comparing Quantities

p27

9/24

#1-5 School Store Revisited - $2E + 3P = 130$

See Student Activity Sheet 5

#1 What does $2E+3p=130$ mean?

E = price of one eraser in cents

2 = # of erasers

P = price of one pencil in cents, 3 = # of pencils, 130 = price in cents for 2 erasers and 3 pencils

2e means two erasers, 3p means 3 pencils, and 130 means 130 cents

#2 What # in circle? Write equation

The # is 230, Equations - $4E + 6p = 260$

#3 See Student Activity Sheet 5

#4 See Student Activity Sheet 5

#5 $1p = ?$, $1e = ?$

One pencil costs 20¢ and a eraser is 25¢

Comparing Quantities

9/20

p28

6-8 Hats + Glasses - $3H + 2G = 54.50$
$2H + 3G = 50.50$

H = price of hat
G = price of glasses

#6 Write equations

$3H + 2G = 54.50$
$2H + 3G = 50.50$

#7 1H+4G=? Work: $3H + 2G = 54.50 \rightarrow \times 3 \rightarrow 9H + 6G = 163.50$
$2H + 3G = 50.50 \rightarrow \times 2 \rightarrow 4H + 6G = 101$

(S) $5H = 62.50$

DS $1H = 12.50$

Since H=12.50
Then 2H = 25

$2H + 3G = 50.50$
$25 + 3G = 50.50$
$3G = 25.50$

DS $1G = 8.50$

$12.50 + (8.50 \times 4) = ?$
$12.50 + 34 = 46.50$

$1H + 4G = 46.50$

Check

(1) $3H + 2G = 54.50$
(2) $2H + 3G = 50.50$

$1H + 4G = 46.5$
$5G = 42.5$
DS $1G = 8.50$
DS $1H = 12.50$

5H	0G	62.5
4H	1G	58.5
3H	2G	54.5
2H	3G	50.5

#8 one hat is 12.50 and a pair of glasses is 8.50

Comparing Quantities

p 32

9/14

Flash Forward

#20-21 $4L + 3M = 96$

$L + M = 27$

#20 What is L and what is M?

$4L + 3M = 96$

$-(L + M = 27)$

$3L + 3M = 81$

$L = 15$

$27 \times 3 = 81$

$L + M = 27$

$15 + M = 27$

$M = 12$

The L is 15, and an M is 12.

#21 Make a story

There are 2 tables at an expensive pasta restaurant. Table one orders 4 large pasta dishes and 3 small for $96. The other table orders just 1 large and 1 small. Find the price of each item. 1 for $27.

Flash Forward #1

Comparing Quantities

p 36

9/20

10 = 3 I rises and 4 Daisies
9 = 2 I + 5 D

I = price of I rises in $

D = price of Daisys in $

A Write an equation

10 = 3I + 4D

9 = 2I + 5D

B What is 1I + 6D

10 = 3I + 4D → x1 → 10 = 3I + 4D

9 = 2I + 5D → x2 → 18 = 4I + 10D

sub

8 = 1I + 6D

8 = 1I + 6D (5D)

C What is 1I, 1D?

8 = 1I + 6D → x2 → 16 = 2I + 12D

7 = 7D

D? 1 = 1D

9 = 2I + 5D

9 = 2I + 5

D? 4 = 2I

2 = 1I

1 rises is $2, a daisy is $1

Comparing Quantities
Test Notes

9/20

5 problems

p # problems similar to

1. p 36, # 1, using combo chart
2. p 36 # 1 using equation
3. p 35 # 2, using notebook
4. p 34 # 2 using your choice
5. p 34 # 1 using your choice

Comparing Quantities
Worksheet

q:30

#1 Flower Shop Chart - $2R+3C=8.50$
$3R+4C=12$

R = price of 1 roses in $
C = price of 1 carnations in $

Prices in $

# of Roses	0	1	2	3	4	5	6
7							
6							
5							
4				12			
3					12		
2				8.50			
1	2		5				
0	0	1.5	3				

# of carnations

1C = $1.50
1R = $2

C - 3,5
→ +1,5
1 +2

One carnation is a dollar fifty ($1.50) and a rose is 2 dollars

#2 Flower Shop Equation - $2R+3C=8.50$
$3R+4C=12$

R = price of 1 roses in $
C = price of 1 carnations in $

Sub ↑ $2R+3C=8.50$
$3R+4C=12$
↓ $1R+1C=3.50$
×2 $2R+2C=7$

Comparing Quantities Worksheet

9/30

Rewrites $\begin{cases} 2R + 2C = 7 \\ 2R + 3C = 8.50 \end{cases}$ so

$1C = 1.50$

$2R + 3C = 8.50$

$2R + 4.50 = 8.50$

$2R = 4$

$1R = 2$

$1R + 2C = 2 + 3$

$1R + 2C = 5$

One carnation is $1.50, and a rose is 2 dollers.

#3 Diner Note book.

See Next Page

Comparing Quantities Worksheet

#3

Notebook

Line	Hamburger	Salad	Drink	total in $	Move
1	3	0	3	12	
2	1	4	2	17,5	
3	0	2	1	7,5	
4	0	4	2	15	L3 x 2
5	1	0	0	2,5	L2 - L4
6	3	0	0	7,5	L6 x 3
7	0	0	3	4,5	L1 - L6
8	0	0	1	1,5	L7 ÷ 3
9	0	2	0	6	L3 - L8
10	0	1	0	3	L10 ÷ 2
11					

Hamburger = $ 2,50
Drink = $ 1,50
Salad = $ 3

a hamburger costs $ 2,50, a salad costs $ 3, and a drink costs $ 1,50

Review --
Comparing Quantities

Name: Michael Plasmeier

) At a Flower shop, Tim paid $8.50 for 2 roses and 3 carnations.
Ellen paid $12 for 3 roses and 4 carnations.
Find the cost of one rose &
Find the cost of one carnation using the **combination chart** method.

At a Flower shop, Tim paid $8.50 for 2 roses and 3 carnations.
Ellen paid $12 for 3 roses and 4 carnations.
-- Write equations representing this information.
-- Write an equation that shows the price of one rose and two carnations.
-- Find the cost of one rose &
Find the cost of one carnation using the **equation** method.

Matt is a waiter at Erin's Diner. He is new to the job and has found his first day hectic ! He needs HELP !!!!!!!
Below are his first three order:

3 Hamburgers	0 Salads	3 Drinks	$12
1 Hamburger	4 Salads	2 Drinks	$17.50
0 Hamburgers	2 Salads	1 Drink	$7.50

Can you help him find the price of one hamburger? one salad? one drink? using the **notebook notation** method?

Math

Graphing Equations

10/7

Graphing Equations p2

#1-2 See Student Activity Sheet 1

#1 Is saying that the fire is NW, or specific?

No, because with the lines I drew on Sheet 1, shows the fire could be anywhere in that line. They need to ~~could~~ tell how ~~far~~ away, ~~and the exact degree~~ if they wanted to be more perice, ~~even if it was exact NW~~, you could still not know where it is.

2. ~~XX~~ Now you can tell exactly where the fire is, it is at the point where the two lines meet. This is indicated at the pink dot on Sheet 1

10/7

Graphing Equation p3

3.

A. NE equals 45°
SE ≅ 135°

B. Oppesent NE = SW
Opposet SE = NW

C. SW = 225°
NW = 315°

4. I would recomend degress because it is more exact then simple directions.

Graphing Equations

10/7

p4

#3-6 See Student Activity Sheet 2

#5 See Student Activity Sheet 2

The orange circle is where the fire is located.

#6 See Student Activity Sheet 2

The blue circle is where the 2nd fire is located

Graphing Equations

10/7

p5

#7-8 See Student Activity Sheet 3

#7

A. They know some thing is wrong because all 3 lines never all meet.

B. 231° is the correct measurement for tower 5

#8 No, the reports are not possible, the lines never meet.

Graphing Equations

10/7

p6

#9

A Opposite 30° is 210°

B. 310° is shown, ~~opposite~~ is 130°

T
or www

Graphing Equations

10/8

p 8

#1 Fire on Computer screen

a. Distance between A+B = 10km
" " C+D = 15km

b. O is half way between A+B.

Graphing Equation
p4

10/8

#2-4 Notes:

Ordered pair: 1st # is horisontal cordinate (x), 2nd # is vertal cordinite (y) or (x, y)

So F = (10, 15) (see worksheet)

#2. 1/2 way between C + F = (5, 15)

#3. What are cordinites?:

A 10 km west of B = (-10, 5)

B 15 km east of A = (15, -5)

C 15 km west of A = (-15, -5)

#4 B = (0, 5) - what are the rest?

A A = (0, -5)
C = (0, 15)

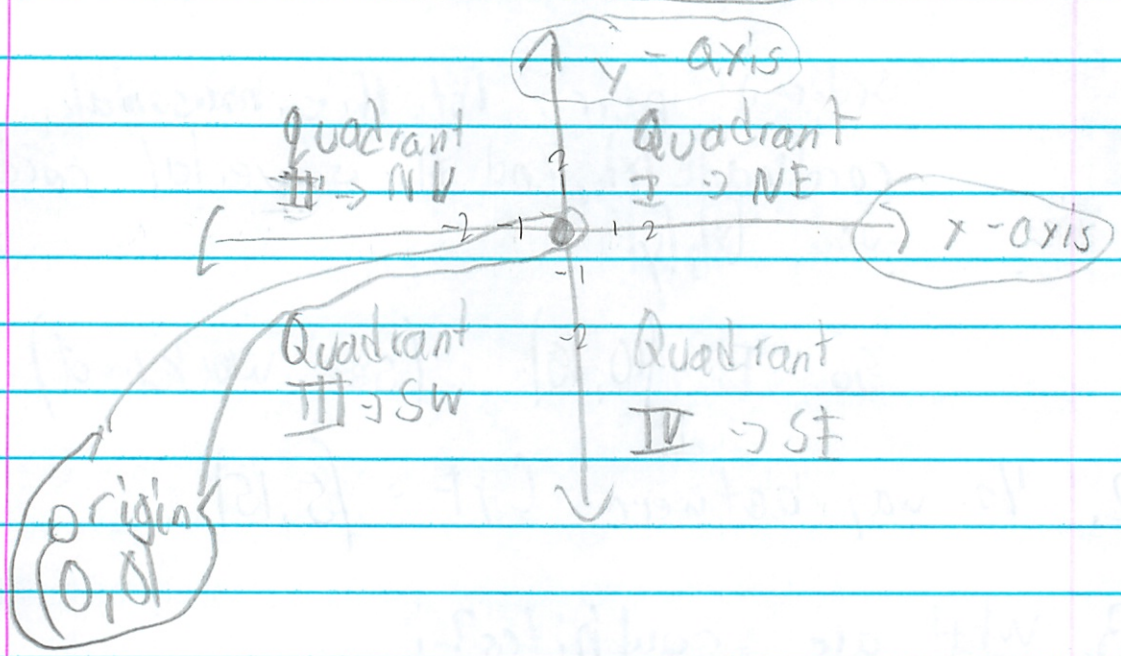
B O = (0, 0)

Graphing Equations p/8

10/8

#5-7

Coordinate System



#5 Quadrant 3 or the SW quadrant is in double negitive pairs.

#6 $(-20, -5)$ is 20 km west of point B.

#7 $F = (10, 15)$

A $A = 29$
$B = 45°$
$C = 90°$

B $G = (5, 10)$

C $A = 19°$
$B = 45°$
$C = 135°$

Graphing Equations

p11

10/8

#8 River

A: (-18, 20), (20, -7) is where the river disappears

B (0, 1.5) is where the river crosses the y axis.
(7, 8) " " " " " " x axis

#9 fire is moving south

A 1km = (10, 14)
2km = (10, 13)
3km = (10, 12)
13km = (10, 2)

B The x coordinate always stays the same because the fire is moving up or down, not east to west

#10 The wind is going east or west.

Graphing Equations

10/8

p 12

#11 A $x = 10$ describe a line that is 10 km east of the origen. It is like taking the x-axis and adding 10.

B 5 km north of O is $y = 5$

#12 A $x = -5$ is the line of A (5 km of y-axis)

B $y = 5$ is a horizonal line of C (5 km n. of x-axis)

#13

A See Student Activity Sheet 4

B $x = 16$ is the longest fire break at 10.5 km or $y = 8$

Graphing Equations

#13 10/10

#14 See Student Activity Sheet 4

(17, 5) $16 < x < 18$

$4 < y < 6$

#15 (15, 3) $14 < x < 16$

$2 < y < 4$

X is greater then 14 an less then 16 and y is greater then 2 and less then 4

#16 See Student Activity sheet 4

Graphing Equations
p16

10/14

#1 See Student Activity sheet 5

A [+10, +15] A → 5

B [+10, −5] C → 5

Direction pair
[x component, y component]
→ move ↑ move

#2 See Student Activity Sheet 5 (C = 20, 15)

A [+20, +20] A → 6

B [+20, +10] B → 6

C [+20, 0] C → 6

#3 [+10, +5] ∈ info → [+20 +10] ratio is 1:2 or y:x

Ans: The have the same ratio of 2:1

#4 silkpad

Graphing Equations

p17

10/14

#15 [0, 10] [0, 11], [0, 12]

#16

A [-5, 5] [-10, 10] from B

B [5, -5] [10, -10] from b

#17

A East

B South

Graphing Equations

p18

10/14

#8 See Graph 3

Fire is at point (-18, 9)

#9 Yes, because I ploted all the points from A and they all lined up. Same ratio - 3 : 2 = $\frac{y}{x}$

#10 A See Graph 3

B A quick way to draw all the points is to draw 1, conect it to point A and draw a line going up from the 2 points toheter

#11 See Graph 4

$\frac{y}{x}$ $\frac{3}{1}$ $\frac{12}{4}$

A Same, ~~they are just [x4, x3]~~

B Different, not 1 line (3:1)

C Same, ~~X~~ No because they go in diff direction ratio

D Different, the 2 points don't mach to point

E Same

F Same

Cross product, you can do

same ratio doesn't mean same direction

#12, A See Graph 4

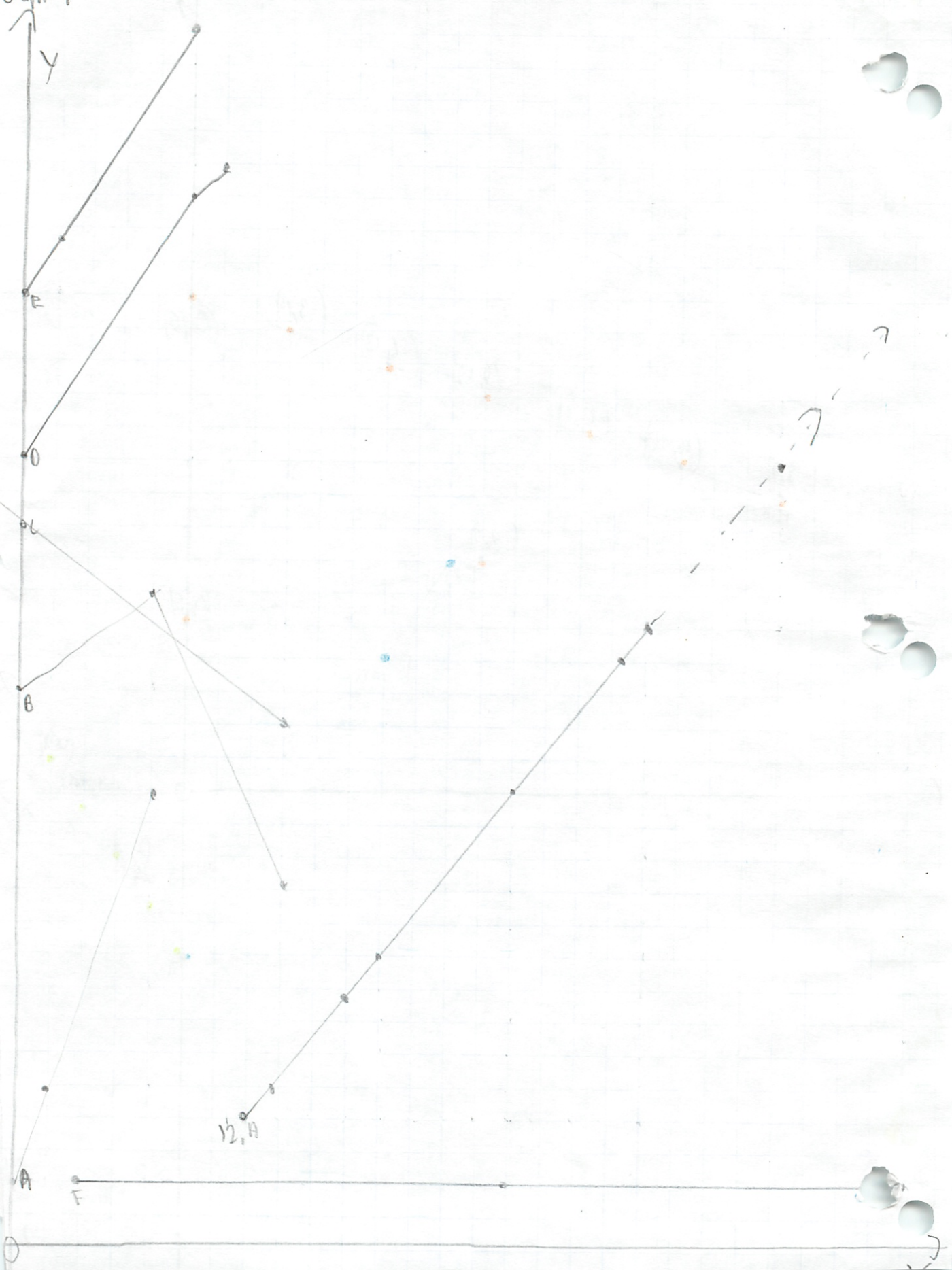
[4, 5] [8, 10] [16, 20]

[3, 3.8] [11.2, 14] [0.8, 1]

B. If you multiply or devide they x are all multipls, they have the same ratio

Graph 3

Graph 4



Graphing Equations

p 18

10/15

Revisited

#8 I should do the same thing and lable each point. I should also extend the line out past where they intersect and add an arrow. I could also do this

Point B (0,5) [-9, +2] (-9,7) (-18,9)

Point C (0,15) [-3, -1] (3, 14) (6, 13) (9, 12) ↗ (12, 11) (15, 10) (18, 9)

#9 I should mention a ratio.

(?) $\frac{x}{y} = \frac{2}{3}$ $\frac{-6 \to -2}{9 \to 3}$ $\frac{-8 \to -2}{12 \to 3}$

#10 I could have just put multiples like

- [2, 3] - [16, 24]
- [4, 6] - [.5, .75]

lable on map

#11 I could have figured at by ratios. (?)

#12 Same as #10, I could have multples of this

Could you do this:

(?) [x comp.] / [y. comp] = [x comp.] / [y. comp] =

Ratio is comparison of 2 numbers. R218 PD6 10/16/03

boys to girls

6 to 9

-6 : 9

-6

9

Graphing Equations p. 19

10/16

#13-14 See copied p. 19

#13 D The rays meet to form a straight line.

#14 A

1	0.8
1.5	1
9	6
12	8
18	12
~~20~~	~~13~~

Only Need 3

B.

-1	-0.8
-1.5	-1
-3	-2
-8	-5
-15	-10
~~-20~~	~~13~~

$\frac{-18}{6} \rightarrow \frac{-2}{-3}$

C. They can be the same but, both positive and negative signs must be different ? You can cross multiply.

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

Graphing Equations

ratio of: p20

#15-18 slope → $\frac{\text{Vertical component}\ (y)}{\text{horizontal component}\ (x)}$

$[x, y]$

#15 Points $(-1, -3)$ $(-3, 1)$ $(-2, -1)$ $(0, -5)$

Graphing Equations

p 21

10/17

#19 See copied page 21

A: $\ell = [2, 3]$ or $\left(\frac{3}{2}\right)$ correct $\begin{bmatrix} x_2 - x_1 \\ y_2 - y_1 \end{bmatrix}$ Should say

$m = [1, 2]$ or $\left(\frac{2}{1}\right)$

B I believe it is 6, 12. I did this by trying to continue the line. Or I could do:

$[1, 2) \times 6 \quad [6, 12]$ or $(6, 12]$

$[2, 3]$ from $(0, 3)$

$(2, 6)$

$(4, 9)$

$(6, 12]$

Graphing Equations

11/3

p23

1. The line is jagged because of the low resolution.

2. You can tell that it is [+1, +2] is goes over one and up 2. The box is 1 wide and 2 high [2] or slope $\frac{2}{1} \rightarrow 2$

3. [0,5] [1,3] [1,7] [2,9] [+2,4]

[1,2] ·1
[2,4] ·2
[10,20] ·10

4. [10,20] is the movement. You are at (10,25] by moving 10 steps

5. 25 - [25,50] (25,55]

1000 - [1000,2000] (1000,2005)

Graphing Equations

p 24 + 25

11/3

4. (0,5)
[-1,-2] [-1,-2]
(-1,3) [-10,-20]
(-2,1)

A (-10,-15)

B (-100,-195) [-100,-200]

5.) skipped
6.

p 25

7. Starting point (0,5) and a 100 horizontal steps of +1
you got x = 100 and y = 2×100 + 5 = 205

A Write of a rule for 75 horizontal steps of +1

Starting (0,5)	Starting point (0,-3)
x = 75	x = 75
y = 75×2 + 5 = 155	y = 75×2 - 3 = 147

B. 175 horizontal of +1

x = 175	← Same
y = 175×2 + 5 = 355	x = 175
	y = 175×2 - 3 = 347

C $3\frac{1}{2}$ horizontal of +1

x = $3\frac{1}{2}$	← Same
y $3\frac{1}{2}$×2 + 5 = 12	x = $3\frac{1}{2}$
	y = $3\frac{1}{2}$×2 - 3 = 4

#8A The forula y = 5 + 2x means y coordinate is 5 is added to 2 times the value of x

B y = 5×(-3) + 5 = -10. It should work.

Graph Paper

11/5

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

If x equals 3 then $y = \frac{2}{3} \times (3) - 4$

$y = 2 - 4$

$y = -2$

$(3, -2)$

Need to do 3 of these

If x equals -3 then $y = \frac{2}{3} \times (-3) - 4$

$y = -2 - 4$

$y = -6$

$(-3, -6)$

Ordered pairs Not Slope

If x equals 0 then $y = \frac{2}{3} \times 0 - 4$

$y = 0 - 4$

$y = -4$

$(0, -4)$

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

(m) slope — where the line crosses the y axis (b)

#2 $y = 2x + 3$

$x = 2$ then $y = 2 * 2 + 3$

$y = 4 + 3$

$y = 7$

$(2, 7)$

Graph Paper Cont

11/5

$x = 0$ then $y = 2*0+3$

$y = 0+3$

$(0,3)$ $y = 3$

$x = 1$ then $y = 2*1+3$

$y = 2+3$

$(1,5)$ $y = 5$

y-intersept = y coordinate of the point where the line crosses the y-intesept

(or) you could do is $y = 2x+3$

Need

Slope (m) y-inter (n)

$m = 2$ $\rightarrow 2$ or (x)

$b = 3 \rightarrow ($

$y =$

Slop

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

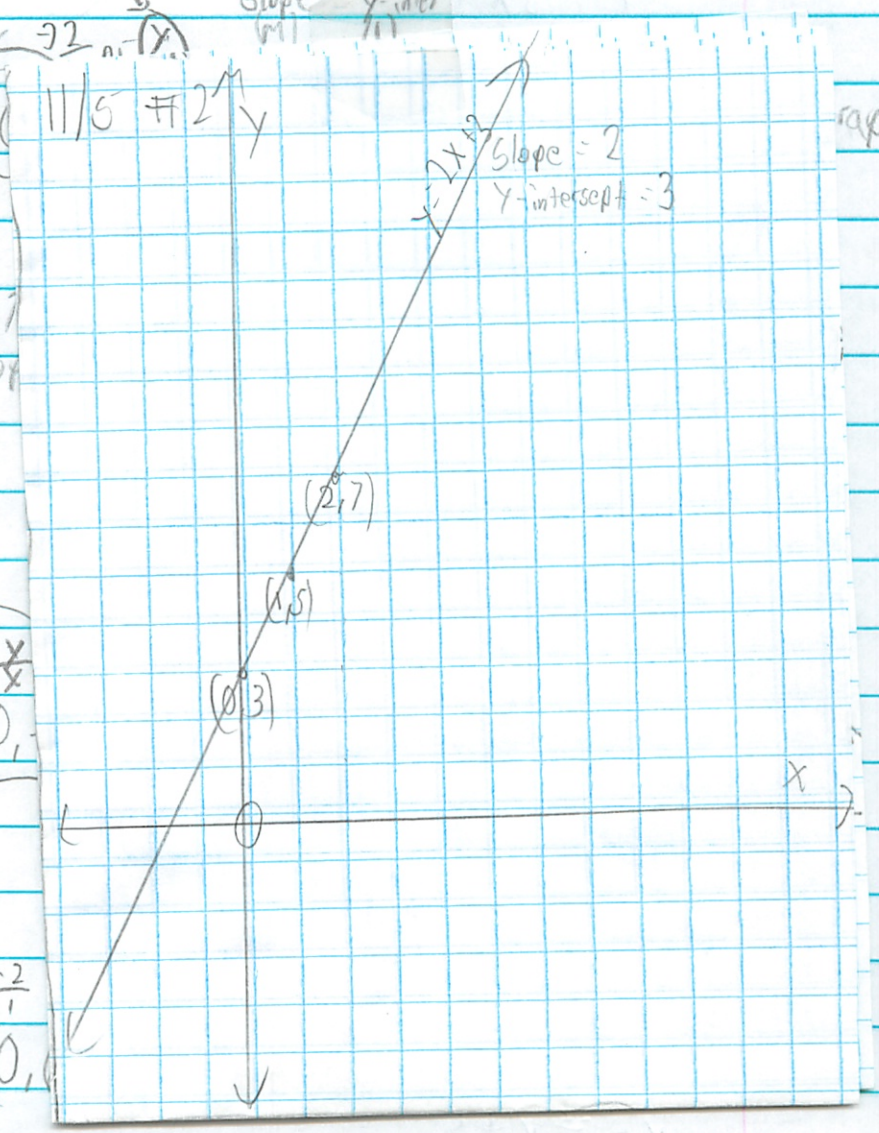
$m = -\frac{2}{3} \rightarrow \frac{2}{-3} \rightarrow \frac{y}{x}$

$b = -1 \rightarrow (0,$

4. $y = -2x + 6$

$m = -2 \rightarrow \frac{-2}{1}$

$b = 6 \rightarrow (0,$



Graphing Equations
GF-6A

11/7

t: $y = mx + b$

$m = \frac{(-3,13)}{(0,11)}$

$\left[\frac{-3-0}{13-11}\right]$

$\left[\frac{-3}{2}\right]$

$\frac{x}{y} \frac{2}{-3} \rightarrow -\frac{2}{3}$

$b = (0,11) \rightarrow 11$

Need?

$y = -\frac{2}{3}x + 11$

n: $y = mx + b$ G? Need

$m = \frac{(1,0)}{(0,-3)}$

$\left[\frac{1-0}{0-(-3)}\right]$

$\left[\frac{1}{3}\right]$

$\frac{x}{y} \rightarrow \frac{3}{1} \rightarrow 3$

$b = (0,-3) \rightarrow -3$

$y = 3x - 3$

m: $m = \frac{(-3,7)}{(0,5)}$ $y = mx + b$

$\left[\frac{-3-0}{7-5}\right]$

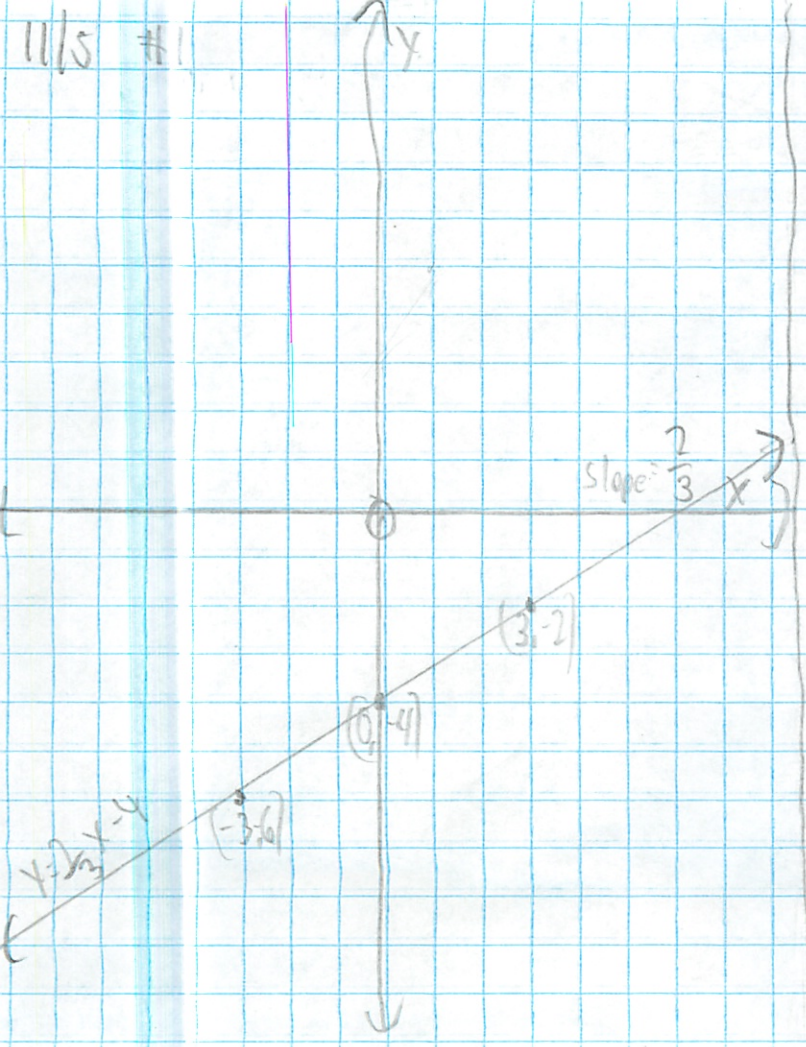
$\left[\frac{-3}{2}\right]$

$\frac{x}{y} \rightarrow -\frac{2}{3} \rightarrow -\frac{2}{3}$

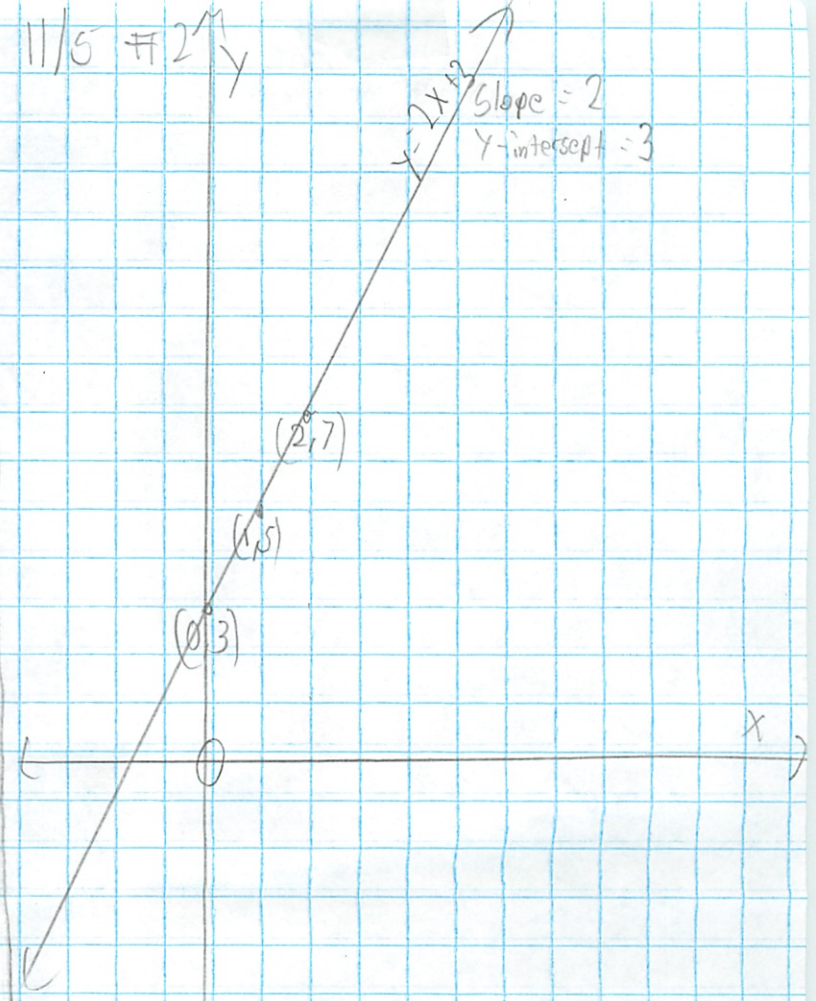
$b = (0,5) \rightarrow 5$

$y = -\frac{2}{3}x + 5$

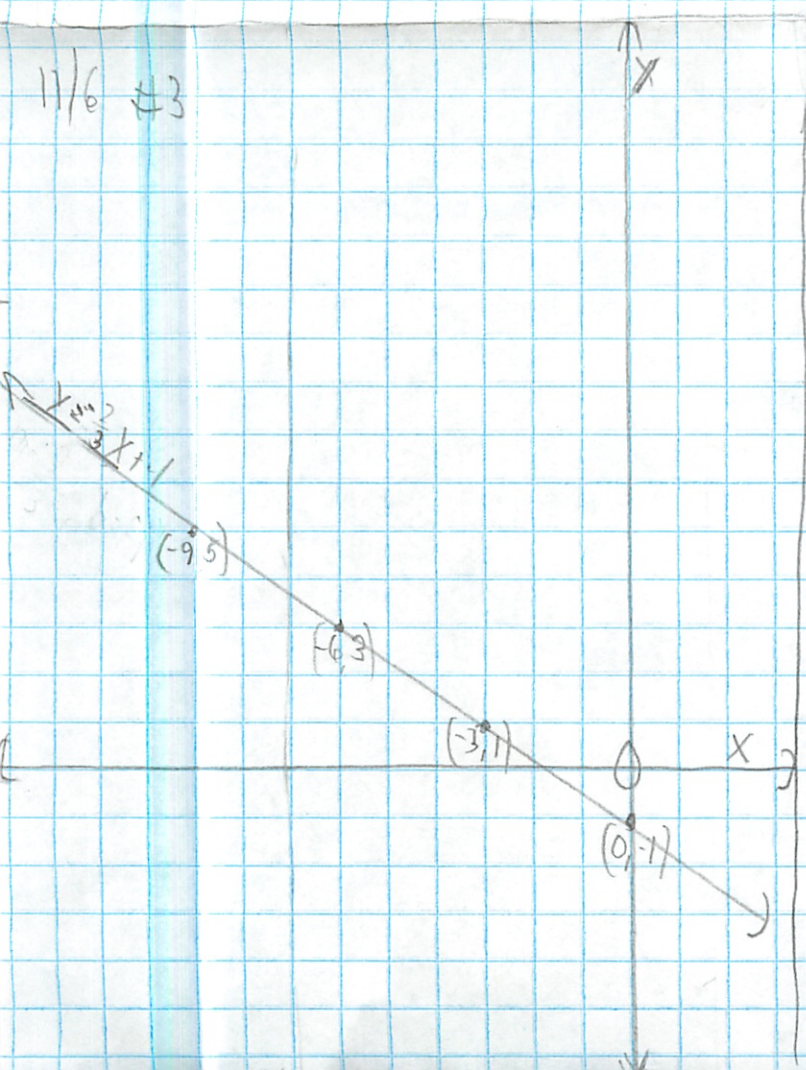
11/5 #1



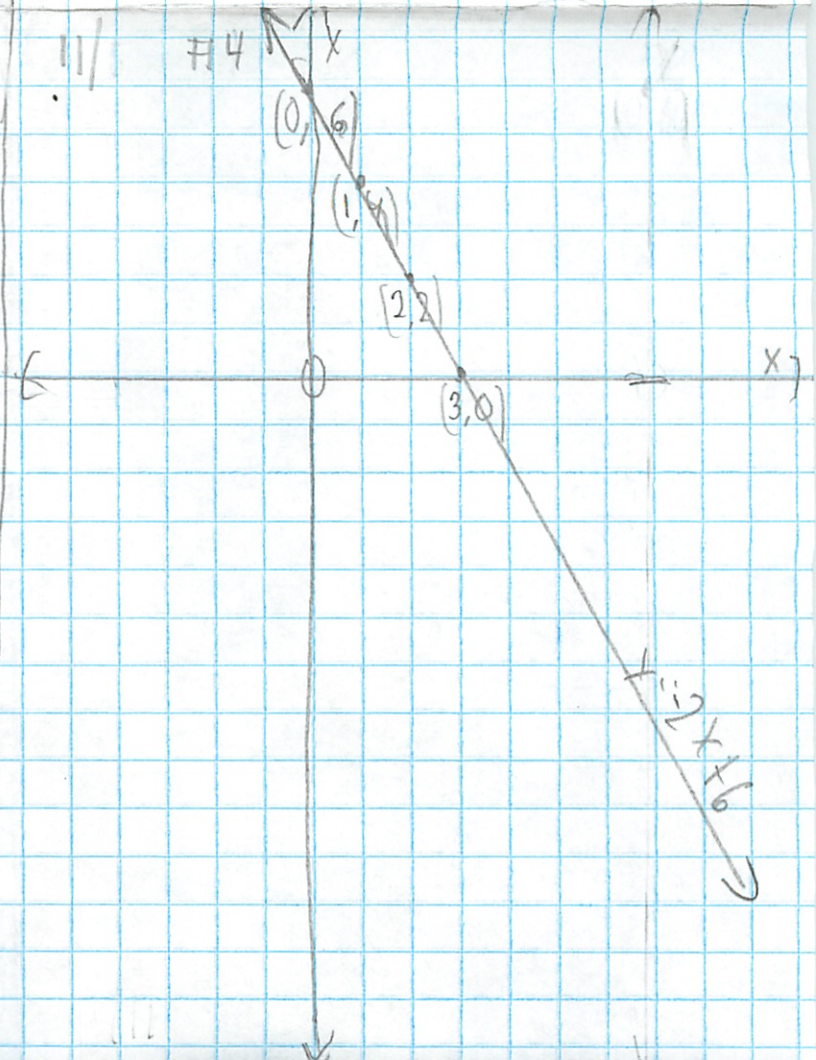
11/5 #2



11/6 #3



11/ #4



Graphing Equations
OE-6A

11/7

p: $y = mx + b$

$m = \begin{pmatrix} -2, -8 \\ 0, -11 \end{pmatrix}$

$[-2 - 0, -8 - (-11)]$

$[-2, 3]$

$\frac{y}{x} \; \frac{3}{-2} \rightarrow \left(-\frac{3}{2}\right)$

$b = (0, -11) \rightarrow -11$

$y = -\frac{3}{2}x - 11$ ~~-11~~ -12

u: $y = mx + b$

$m = \begin{pmatrix} 3, -9 \\ 0, -11 \end{pmatrix}$

$[3 - 0, -9 - (-11)]$

$[3, 2]$

$\frac{y}{x} \rightarrow \left(\frac{2}{3}\right)$

$b = (0, -11) \rightarrow -11$

$y = \frac{2}{3}x - 11$ -12

counted wrong

Lines w/ same slope are parallel.

Lines w/ the negative reprecirpicle are perpeticular (they meet and for right angles)

Like $\frac{2}{3} \rightarrow -\frac{3}{2}$

perpeticlure

* only if they have the same y-intersept

Graphing Equations Notes

11/17

- variable → a symbol or letter the represents a number
- equations → A statement that 2 "things" are equal
- solution → The value for the variable that makes the equation true.
- solve → find the solution

Finding Solution

(+) $m+7=12$

$m+7-7=12-7$) Zero out the number on (+) and (−)

$m+0=5$

$m=5$

(+) $-8+q=11$

$(8+8)+q=11+8$

$0+q=19$

$q=19$

(÷) $-62=-5w$

$\frac{-62}{-5}=\frac{-5w}{-5}$

$12\frac{2}{5}=w$

(−) $m-11=-7$

$m-11+11=-7+11$

$m+0=4$

$m=4$

(÷) $\frac{m}{-8}=2$

$\frac{m}{-8}\times\frac{-8}{1}=2\times-8$

$1m=-16$

(×) $4q=-12$

$\frac{4q}{4}=\frac{-12}{4}$) 4 out the number on (×) and ÷

$1q=-3$

$q=-3$

Graphing Equations

Solving 2 equations

- do + or − first (zero out)
- undo × or ÷ (one out)

$2m + 1 = 9$

$2m + 1 - 1 = 9 - 1$

$2m = 8$

$\frac{2m}{2} = \frac{8}{2}$

$m = 4$

$9 = 2m + 1$

$y = 2x + 1$

$[4, 9]$ would be on line

Check

$16 = 4 - 6m$

$16 - 4 = 4 - 4 - 6m$

$12 = -6m$

$\frac{12}{-6} = \frac{-6m}{-6}$

$-2 = m$

$16 = 4 - 6m$

$16 = 4 - 6(-2)$

$16 = 4 - (-12)$

$16 = 16$ (True)

$\frac{x}{2} + 3 = -1$

$\frac{x}{2} + 3 - 3 = -1 - 3$

$\frac{x}{2} = -4$

$\frac{x}{2} \cdot \frac{2}{1} = -4 \times 2$

$x = -8$

$\frac{x}{2} + 3 = -1$

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

$-4 + 3 = -1$

$-1 = -1$

$(-8/2)$

Graphing Equations
Vive la France Worksheet

11/18

S $3n - 5 = 19$

$3n - 5 + 5 = 19 + 5$

$3n = 24$

$\frac{3n}{3} = \frac{24}{3}$

$n = 8$

T $-5x + 7 = 27$

$-5x + 7 - 7 = 27 - 7$

$-5x = 20$

$\frac{-5x}{-5} \quad \frac{20}{-5}$

$x = -4$

O $4x + 2 = 14$

$4x + 2 - 2 = 14 - 2$

$4x = 12$

$\frac{4x}{4} = \frac{12}{4}$

$x = 3$

I $-8w + 4 = -36$

$-8w + 4 - 4 = -36 - 4$

$-8w = -40$

$\frac{-8w}{-8} \quad \frac{-40}{-8}$

$w = 5$

C $9y + 10 = -8$

$9y + 10 - 10 = -8 - 10$

$9y = -18$

$\frac{9y}{9} = \frac{-18}{9}$

$y = -2$

A $11 + 6k = 65$

$11 - 11 + 6k = 65 - 11$

$6k = 54$

$\frac{6k}{6} \quad \frac{54}{6}$

$k = 9$

E $2a - 15 = -1$

$2a - 15 + 15 = -1 + 15$

$2a = 14$

$\frac{2a}{2} \quad \frac{14}{2}$

$a = 7$

M $7 + 3m = -29$

$7 - 7 + 3m = -29 - 7$

$3m = -36$

$\frac{3m}{3} \quad \frac{-36}{3}$

$m = -12$

Graphing Equations

Vive la France

11/12

D

$1 - 10x = 81$

$1 - 1 - 10x = 81 - 1$

$-10x = 80$

$\frac{-10x}{-10} = \frac{80}{-10}$

$x = 8$

F:

$44 = 5x - 6$

$44 + 6 = 5x - 6 + 6$

$50 = 5x$

$\frac{50}{5} = \frac{5x}{5}$

$10 = x$

W:

$-11r - 2 = -24$

$-11r - 2 + 2 = -24 + 2$

$-11r = -22$

$\frac{-11r}{-11} = \frac{-22}{-11}$

$r = 2$

H

$2 - 7d = -75$

$2 - 2 - 7d = -75 - 2$

$-7d = -77$

$\frac{-7d}{-7} = \frac{-77}{-7}$

$d = 11$

P:

$-7 = 2n + 19$

$-7 - 19 = 2n + 19 - 19$

$-26 = 2n$

$\frac{-26}{2} = \frac{2n}{2}$

$-13 = n$

B:

$6 - x = 15$

$6 - 6 - x = 15 - 6$

$-x = 9$

Or you could do combos

$x = -9$

Flip $-x = 9$

$x = -9$

U

$-4y - 9 = 15$

$-4y - 9 + 9 = 15 + 9$

$-4y = 24$

$\frac{-4y}{-4} = \frac{24}{-4}$

$y = -6$

L:

$31 = 4 - 9y$

$31 - 4 = 4 - 4 - 9y$

$27 = -9y$

$\frac{27}{-9} = \frac{-9y}{-9}$

$-3 = y$

W

$-8 + 12e = -20$

$-8 + 8 + 12e = -20 + 8$

$12e = -12$

$\frac{12e}{12} = \frac{-12}{12}$

$e = -1$

R:

$-52 - 3v = 8$

$-52 + 52 - 3v = 8 + 52$

$-3v = 60$

$\frac{-3v}{-3} = \frac{60}{-3}$

$v = -20$

Graphing Equations

11/18

Solving Equ. w/ Var. on 2 sides (From the 8.1 graph)

$4x+12 = 2x+18$

$4x+12=2x+18$

$2x+12=18$

$2x=6$

$\frac{2x}{2}=\frac{6}{2}$

$1x=3$

$x=3$

Need this way

$4x+12=2x+18$

$4x-2x+12=2x-2x+18$

$2x+12=18$

$2x+12-12=18-12$

$2x=6$

$\frac{2x}{2}\ \frac{6}{2}$

$x=3$

1. Zero out a letter term ← Strongly suggest to do 1st
2. Zero out (+) or (−)
3. Zero out (×) or (÷)

$4m+1=-2m-11$

$4m+2m+1=-2m+2m-11$

$6m+1=-11$

don't add 11 or your stack

$6m+1-1=-11-1$

$6m=-12$

$\frac{6m}{6}=\frac{-12}{6}$

$m=-2$

check

$4m+1=-2m-11$

$4(-2)+1=-2(-2)-11$

$-8+1=4-11$

$-7=-7$

Graphing Equations

Solving (8.1) Algebraically

11/19

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

$2x + \frac{1}{2}x - 15 = -\frac{1}{2}x + \frac{1}{2}x + 5$

$2\frac{1}{2}x - 15 = 5$

$2\frac{1}{2}x - 15 + 15 = 5 + 15$

$2\frac{1}{2}x = 20$

$\frac{2\frac{1}{2}x}{2\frac{1}{2}} = \frac{20}{2\frac{1}{2}}$ → How to do

$x = 8$

Need to find y

$20 \div 2\frac{1}{2}$

$\frac{20}{1} \div \frac{5}{2}$

$\frac{20}{1} \times \frac{2}{5} = \frac{8}{1} = 8$

$y = 2(8) - 15$

$y = 16 - 15$

$y = 1$

$x = 8, y = 1$

$(8, 1)$

Graphing Equations

Super Star Worksheet

11/19

#1 $5x+6=2x+15$

$5x-2x+6=2x-2x+15$

$3x+6=15$

$3x+6-6=15-6$

$3x=9$

$\frac{3x}{3}=\frac{9}{3}$

$x=3$

#2 $7x-4=20+3x$

$7x-4+4=20+4+3x$

$7x=24+3x$

$7x-3x=24+3x-3x$

$4x=24$

$\frac{4x}{4}=\frac{24}{4}$

$x=6$

#3 $2x+15=43-5x$

$2x+15-15=43-15-5x$

$2x=28-5x$

$2x+5x=28-5x+5x$

$7x=28$

$\frac{7x}{7}=\frac{28}{7}$

$x=4$

#4 $3+4x=9x+13$

$3-13+4x=9x+13-13$

$-10+4x=9x$

$-10+4x-4x=9x-4x$

$-10=5x$

$\frac{-10}{5}=\frac{5x}{5}$

$-2=x$

#5 $2x-10=44+8x$

$2x-10+10=44+10+8x$

$2x=54+8x$

$2x-8x=54+8x-8x$

$-6x=54$

$\frac{-6x}{-6}=\frac{54}{-6}$

$x=-9$

#6 $-7x-2=24-9x$

$-7x-2+2=24+2-9x$

$-7x=26-9x$

$-7x+9x=26-9x+9x$

$2x=26$

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

$x=13$

Graphing Equations

Super Star Worksheet

11/19

#7 $27 - 11x = x - 33$

$27 + 33 - 11x = x - 33 + 33$

$60 - 11x = x$

$60 - 11x + 11x = x + 11x$

$60 = 12x$

$\frac{60}{12} = \frac{12x}{12}$

$5 = x$

#8 $21x + 6 = 17x - 26$

$21x + 6 + 26 = 17x - 26 + 26$

$21x + 32 = 17x$

$21x - 21x + 32 = 17x - 21x$

$32 = -4x$

$\frac{32}{-4} = \frac{-4x}{-4}$

$-8 = x$

#9 $11x = 8x - 6$

$11x + 6 = 8x - 6 + 6$

$11x + 6 = 8x$

$11x - 11x + 6 = 8x - 11x$

$6 = -3x$

$\frac{6}{-3} = \frac{-3x}{3}$

$-2 = x$

#10 $-x - 29 = 13 + 2x$

$-x - 29 + 29 = 13 + 29 + 2x$

$-x = 42 + 2x$

$-x - 2x = 42 + 2x - 2x$

$-3x = 42$

$\frac{-3x}{-3} = \frac{42}{-3}$

$x = -14$

Graphing Equations

11/20

Way 1

$\frac{m+7}{2} = 3$

Not on quiz →

$\frac{m+7}{2}(2) = 3(2)$

$m+7 = 6$

$m+7-7 = 6-7$

$m = -1$

Way 2

Worksheet 7-2

$\frac{m+7}{2} = 3$

$\frac{m+7}{1}\left(\frac{2}{1}\right) = 3(2)$

$m+7 = 6$

$m+7-7 = 6-7$

$m = -1$

- Do +, ÷
- Undo by ÷, +

7-2

#16 $-21-15m = 219$

$-21+21-15m = 219+21$

$-15m = 240$

$\frac{-15m}{-15} = \frac{240}{-15}$ (1 neg makes this +)

$m = -16$

16
15|240

#25 $-\frac{e}{5} - 12 = -3$

$-\frac{e}{5} - 12 + 12 = -3 + 12$

$-\frac{e}{5} = 9$

$-\frac{e}{5}\left(\frac{-5}{1}\right) = \frac{9}{-5}$ X not ÷

$e = -\frac{4}{9} - 45$

#19 $-\frac{t}{5} - 3 = 17$

$-\frac{t}{5} - 3 + 3 = 17 + 3$

$-\frac{t}{5}\left(\frac{-5}{1}\right) = 20(-5)$ Remember

$t = -20 - 100$

#28 $\frac{t+2}{3} = -5$

$\frac{t+2}{3} \times \frac{3}{1} = -5(3)$

$t+2 = -15$

$t+2-2 = -15-2$

$t = -17$

#22 $\frac{b}{15} = -30$

$\frac{b}{15}\frac{15}{1} = -30 \times 15$

$b = -450$

#31 $\frac{5-8}{-8} = -1$

$\frac{5-8}{-8}\left(\frac{-8}{1}\right) = -1(-8)$

$5-8 = 8$

When 2 up here get 2 here

#31 $\frac{5-8}{-8} \times \frac{-8}{1} = 8 \times 8$

$5-8 = 16$

Graphing Equations

Super Star Worksheet cont

11/20

#11 $-18+5x=-12x-1$

$-18+18+5x=-12x-1+18$

$5x=-12x+17$

$5x+12x=-12x+12x+17$

$17x=17$

$\frac{17x}{17}=\frac{17}{17}$

$x=1$

#12 $-9x-21=35-x$

$-9x+9x-21=35-x+9x$

$-21=35+8x$

$-21-35=35-35+8x$

$-56=8x$

$\frac{-56}{8}=\frac{8x}{8}$

$-7=x$

36
21

#13 $7x-2=-2x-29$

$7x-2+29=-2x-29+29$

$7x+27=-2x$

$7x-7x+27=-2x-7$

$27=-9x$

$\frac{27}{-9}=\frac{-9x}{-9}$

$-3=x$

X **#14** $36+15x=17x$

$36+15x-15x=17x-15x$

$36=2x$

$\frac{36}{2}=\frac{2x}{2}$

$18=x$

2 | 36

Good job right

#15 $-15-4x=6-3x$

$-15+15-4x=6+15-3x$

$-4x=21-3x$

$-4x+3x=21-3x+3x$

$-1x=21$

$x=-21$

#16 $12x-9=8x-37$

$12x-9+38=8x-37+37$

$12x+28=8x$

$12x-12x+28=8x-12x$

$28=-4x$

$\frac{28}{-4}=\frac{-4x}{-4}$

$-7=x$

#17 $-5x+40=6x-70$

$-5x+40+70=6x-70+70$

$-5x+110=6x$

$-5x+5x+110=6x+5x$

$110=11x$

$\frac{110}{11}=\frac{11x}{11}$

$10=x$

#18 $-x-2=1-2x$

$-x+2x-2=1-2x+2x$

$1x-2=1$

$1x-2+2=1+2$

$1x=3$

Graphing Equations Review Worksheet

11/21

#1 $a + -8 = 16$

$a + -8 + 8 = 16 + 8$

$a = 24$

#2 $b - 1 = -29$

$b - 1 + 1 = -29 + 1$

$b = -28$

#3 $-11c = -132$

for (x) $\frac{-11c}{-11} = \frac{-132}{-11}$

$c = 12$

#4 $\frac{d}{-3} = 6$

$\frac{d}{-3} \times \frac{-3}{1} = 6 \times -3$

$d = -18$

#5 $3e + 8 = -10$

$3e + 8 - 8 = -10 - 8$

$3e = -18$

$\frac{3e}{3} = \frac{-18}{3}$

$e = -6$

#6 $16 - 4f = -72$

$16 - 16 - 4f = -72 - 16$

$-4f = -88$

$\frac{-4f}{-4} = \frac{-88}{-4}$

$f = 22$

#6 Check $16 - 4f = -72$

$16 - 4(22) = -72$

$16 - 88 = -72$

$-72 = -72$

#7 $8 - \frac{6}{5} = 11$

$8 - 8 - \frac{6}{5} = 11 - 8$

$-\frac{6}{5} = 3$

$\frac{-6}{5} \frac{5}{1} = 3 \times -5$

$6 = -15$

#8 $2h + 6 = 3h + 9$

$2h + 6 - 6 = 3h + 9 - 6$

$2h = 3h + 3$

$2h - 3h = 3h - 3h + 3$

$-h = 3$

$h = -3$

#9 $-5k + 3 = 2k + 10$

$-5k + 3 - 3 = 2k + 10 - 3$

$-5k = 2k + 7$

$-5k - 2k = 2k - 2k + 7$

$-7k = 7$

$\frac{-7k}{-7} = \frac{7}{-7}$

$k = -1$

Check 9 $-5k + 3 = 2k + 10$

$-5(-1) + 3 = 2(-1) + 10$

$5 + 3 = -2 + 10$

$8 = 8$

#10 $3m - 12 = 24 - 6m$

$3m + 6m - 12 = 24 - 6m + 6m$

$9m - 12 = 24$

$9m - 12 + 12 = 24 + 12$

$\frac{9m}{9} = \frac{36}{9}$

$m = 4$

#11 $2n + 8 = -3n - 15$

$2n + 3n + 8 = -3n + 3n - 15$

$5n + 8 = -15$

$5n + 8 - 8 = -15 - 8$

$5n = -23$

$\frac{5n}{5} = -4.6$

Check 11 $2n + 8 = -3n - 15$

$2(-4.6) + 8 = -3(-4.6) - 15$

$-9.2 + 8 = 13.8 - 15$

$-1.2 = -1.2$

#12 $6p + 11 = -6p - 5$

$6p + 6p + 11 = -6p + 6p - 5$

$12p + 11 = -5$

$12p + 11 - 11 = -5 - 11$

$12p = -16$

$\frac{12p}{12} = \frac{-16}{12}$

$p = -1\frac{1}{3}$

#13 $\frac{2}{3}q + 5 = q + 9$

$\frac{2}{3}q - \frac{2}{3}q + 5 = q - \frac{2}{3}q + 9$

$5 = \frac{1}{3}q + 9$

$5 - 9 = \frac{1}{3}q + 9 - 9$

$-4 = \frac{1}{3}q$

$-12 = q$

See Work Sheet for Rest

Graphing Equations
Quiz Review

11/21

Quiz 9's look like	Review 1
#1-4	#1-4
#5	#5
#6	#7
#7 w/check	#6
#8	#8
#9	#9
#10 w/check	#11, 12
#11, 12	see below

Quiz #11

means check

W/out solving show and explain if $w = 3$ is the solution

$4w + 1 = -2w + 19$

$4(3) + 1 = -2(3) + 19$

$12 + 1 = -6 + 19$

$13 = 13$

Need ↓

$w = 3$ is the solution because when I checked we came up w/ a true statement.

#12

Write a 2 step equation whose solution is $q = 7$

(Like 5, 6, 7)

$q = 7$

$7q = 49$

$7q + 2 = 49 + 2$

$7q + 2 = 51$

Graphing Equations

Review 2 worksheet

#1 $-5+w=-11$

$-5+5+w=-11+5$

$w=-6$

#2 $-11=w-8$

$-11+8=w-8+8$

$-3=w$

#3 $-128=8w$

$\frac{-128}{8}=\frac{8w}{8}$

$-16=w$

16
8|128

#4 $\frac{w}{-4}\times\frac{-4}{1}=8\times-4$

$w=-32$

#5 $-6+4w=-34$

$-6+6+4w=-34+6$

$4w=-28$

$\frac{4w}{4}=\frac{-28}{4}$

$w=-7$

Check #5 $-6+4w=-34$

$-6+4(-7)=-34$

$-6+-28=-34$

$-34=-34$

#6 $18-5w=-12$

$18-18-5w=-12-18$

$-5w=-30$

$\frac{-5w}{-5}=\frac{-30}{-5}$

$w=6$

#7 $11-\frac{w}{4}=-1$

$11-11-\frac{w}{4}=-1-11$

#7 cont $-\frac{w}{4}=-12$

$-\frac{w}{4}\frac{-4}{1}=-12\times-4$

$w=48$

#8 $3w-7=4w-12$

$3w-3w-7=4w-3w-12$

$-7=w-12$

$-7+12=w-12+12$

$5=w$

#9 $-4w+3=2w+21$

$-4w+4w+3=2w+4w+21$

$3=6w+21$

$3-21=6w+21-21$

$-18=6w$

$\frac{-18}{6}=\frac{6w}{6}$

$-3=w$

Check 9 $-4w+3=2w+21$

$-4(-3)+3=2(-3)+21$

$12+3=-6+21$

$-9=-9$

#10 $3w-18=30-5w$

$3w-18+18=30+18-5w$

$3w=48-5w$

$3w+5w=48-5w+5w$

$8w=48$

$\frac{8w}{8}=\frac{48}{8}$

$w=6$

#11 $2w+10=-3w-20$

$2w+10+20=-3w-20+20$

$2w+30=-3w$

$2w-2w+30=-3w-$

$30=-5w$

$\frac{30}{-5}=\frac{-5w}{-5}$

$-6=w$

#12 $4w+7=-4w-49$

$4w+4w+7=-4w+4w-4$

$8w+7=-49$

$8w+7-7=-49-7$

$8w=-56$

$\frac{8w}{8}=\frac{-56}{8}$

$w=-7$

#13 $\frac{3}{4}w+1=-\frac{1}{2}w-2$

$\frac{3}{4}w-\frac{1}{2}w+1=\frac{1}{2}w-\frac{1}{2}w-2$

$\frac{1}{4}w+1=-2$

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

$\frac{1}{4}w=-3$

$\frac{1}{4}w\times4=-3\times4$

$w=-12$

#14 $-6w-5+2w=-37$

$-6w+2w-5=-37$

$-4w-5=-37$

$-4w-5+5=-37+5$

$-4w=-32$

$\frac{-4w}{-4}=\frac{-32}{-4}$

$w=8$

See worksheet

Graphing Equations
p41

12/1

#1 $y = -5 + 2x$

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

A: To find that the chart is correct you can check or do it again.

B: The fire is about at point (8, 11)

C: You can check by Solving equations:

Solve

$-5 + 2x = 15 - \frac{1}{2}x$ ((See 11/18 Notes))

$-5 + 5 + 2x = 15 + 5 - \frac{1}{2}x$

$2x = 20 - \frac{1}{2}x$

$2x + \frac{1}{2}x = 20 - \frac{1}{2}x + \frac{1}{2}x$

$2\frac{1}{2}x = 20$

$\frac{2\frac{1}{2}x}{2\frac{1}{2}} = \frac{20}{2\frac{1}{2}}$

$\boxed{x = 8}$

$20 \div 25$

$\frac{20}{1} \div \frac{5}{2}$

$\frac{4\cancel{20}}{1} \times \frac{2}{\cancel{5}_1} = 8$

$x = 8, y = 11$

$\boxed{8, 11}$

Check

$y = -5 + 2x$

x ? $-5 + 2(8)$

$y = -5 + 16$

$\boxed{y = 11}$

Graphing Equations

12/1

p42

#5 $y = 15 - x$

$y = 5 + 4x$

A $y = 15 - x = C$

$y = 5 + 4x = B$

B $15 - x = 5 + 4x$

$15 - x + x = 5 + 4x + x$

$15 = 5 + 5x$

$15 - 5 = 5 - 5 + 5x$

$10 = 5x$

$\frac{10}{5} = \frac{5x}{5}$

$2 = x$

$y = 15 - x$

$y = 15 - 2$

$y = 13$

The smoke is at point $(2, 13)$

Check

$y = 5 + 4x$

$13 = 5 + 4(2)$

$13 = 5 + 8$

$13 = 13$

See other page for 6, 7 →

p42 + 43

p43 #9 $y = 10 + 2x$

$y = -8 + 2x$

These lines will not intersect ever because they have the same slope and are parallel.

#10 $y = -5 + 8x$

$y = 5 + 7.5$

A The lines are not parallel because their slope is not exactly the same. You can tell by doing the problem

B $-5 + 8x = 5 + 7.5x$

$-5 + 5 + 8x = 5 + 5 + 7.5x$

$8x = 10 + 7.5x$

$8x - 7.5x = 10 + 7.5x - 7.5x$

$.5x = 10$

$x = 20$

$y = -5 + 8x$

$y = -5 + 8(20)$

$y = -5 + 160$

$y = 155$

Point of intersections $(20, 155)$

Graphing Equations

p42

#6 $y = 5 + x \rightarrow$ Tower B

$y = -5 + 1\frac{1}{4}x \rightarrow$ Tower A

$5 + x = -5 + 1\frac{1}{4}x$

$5 + x - x = -5 + 1\frac{1}{4}x - x$

$5 = -5 + \frac{1}{4}x$

$5 + 5 = -5 + 5 + \frac{1}{4}x$

$10 = \frac{1}{4}x$

$40 = x$

$y = 5 + x$

$y = 5 + 40$

$y = 45$

p43 Point of Intersection $(40, 45)$

#7 $y = 15 + 2x$

$y = 5 + 3x$

$15 + 2x = 5 + 3x$

$15 - 5 + 2x = 5 - 5 + 3x$

$10 + 2x = 3x$

$10 + 2x - 2x = 3x - 2x$

$10 = x$

$y = 15 + 2(10)$

$y = 15 + 20$

$y = 35$

Point of I: $(10, 35)$

How to find from other tower

$y = -5 +$

$[10, 40]$

$\frac{x}{x}\ \frac{40}{10} \rightarrow \frac{4}{1} \rightarrow 4$

From A: $x = -5 + \cancel{3}4x$ $\quad y = -5 + 4x$

← see other page for 9, 10

Remember to do the x

$(10, 35)$

$(0, -5)$

$[10 - 0, 35 - (-5)]$

$(10, 40)$

$\boxed{\text{Add}}$

p42+43

p43 #11 #19, p21

A: $e \rightarrow y = 3 + \frac{3}{2}x$

$m = p = 2x$

Do we need to show process?

No

B: $y = 3 + \frac{3}{2}x$

$y = 2x$

$3 + \frac{3}{2}x = 2x$

$3 + \frac{3}{2}x - \frac{3}{2}x = 2x - \frac{3}{2}x$

Can we change to improper?

yes

$3 = .5x$

$6 = x$

$y = 2x$

$y = 2(6)$

$y = 12$

$[6, 12]$ ← Point of intersection

C: My answer was correct

Show $y = mx + b$

$m = \frac{m}{\ } = \frac{y}{x}$

$b =$

Graphing Equations

p44

12/2

#12 $y = 1 + 3x$

$x = -3 - 2x$

A: $-3 - 2x = -1 + 3x$

$-3 + 3 - 2x = -1 + 3 + 3x$

$-2x = 4 + 3x$

$-2x - 3x = 4 + 3x - 3x$

$-5x = 4$

$\frac{-5x}{-5} = \frac{4}{-5}$

$x = -0.8$

B $y = 1 + 3x$

$y = 1 + 3(.8)$

$y = 1 + -2.4$

$y = -1.4$

$(-0.8, 1.4)$

Do your neg. correct

#13 $y = mx + b$

$m = (0, 3)$

$(5, -5)$

$[0 - 5, 3 - (-5)]$

$(-5, 8)$

Do need this

Need this

$\frac{y}{x} \frac{8}{-5} \Rightarrow -\frac{8}{5}$

$b = (0, 3) \Rightarrow 3$

$y = -\frac{8}{5}x + 3$ Correct

$y = mx + b$

$m = (0, -1)$

$(-3, 4)$

$[0 - -3, -1 - 4]$

$[3, -5]$

$\frac{y}{x} \Rightarrow \frac{-5}{3}$

$b = [0, -1]$

$y = -\frac{5}{3}x - 1$ Correct

$-\frac{8}{5}x + 3 = -\frac{5}{3}x - 1$

$-\frac{8}{5}x + 3 + 1 = -\frac{5}{3}x - 1 + 1$

$-\frac{8}{5}x + 4 = -\frac{5}{3}x$

$-\frac{8}{5}x + \frac{8}{5}x + 4 = -\frac{5}{3}x - 1 \mid 15x$

$4 = -\frac{1}{15}x$

$-\frac{5}{3} \quad -\frac{25}{15}$

$\frac{8}{5} \quad \frac{24}{15}$

$\frac{4}{-\frac{1}{15}} \div \frac{-1 \mid 15x}{-1 \mid 15}$

$-60 = x$

$y = -\frac{5}{3}(-60) - 1$

$y = 100 - 1$

$y = 99$

Point of I $(-69, 99)$

$\frac{5}{3} \quad \frac{20}{1} \quad \frac{100}{1} \Rightarrow 100$

Negitive Again

Check this

Math

Decision Making

Decision Making

p2

12/8

#1. What would each group prefer?

A Conservations

The conservationest would want singal-trees family houses because there are more -pollut empty space and open land. -more animals -safer -parks

B Store Merchants

The store people want more townhouses because more people living in townhouses give them more business, so they make more $ $$.

-more room/bigger -rent top/appartment

C Realtors

Realtors are like the store people more houses = more business. However, the singal family house would sell for more $, increasing the commission for selling the house.

Decision Making

p3+4

12/9

#4 12,000 sq m - could 3 football fields fit? (100m × 50 m)

- 1st find area (l×w) 5,000 m²

3 football = 15,000 m²

No you can't fit 3 football fields. You may be able to fit 2.

#5 Find l and w from 12,000 m² and 12,000 m²

Not a square

~~Wrong~~

~~Not [illegible]~~

~~12,000 m²~~

~~4 equal sides~~

~~3,000 m each side~~

120×100m

40m × 300m

30m × 400m

20m × 600m

60m × 200m

Many combos no 1 answer

#6 See Student Activity Sheet 1

#7 The teacher say he is almost correct. 120 houses fit, with space left over. 1m left over on each side of the house is the space. You might not want 1m on each side of your house. You don't have a yard

#9

List: - Streets	- Yards	- Driveways	- Hospital Maby
- Shops Side walks	- Schools Maby	- Police	- Local, Gov. Maby
- Parks/Fields	- Musilipalty	- Fire	- Place of worship

Decision Making

p5+6

12/9

#9 600 sq m for a $12 \times 8\ m^2$

A For sidewalk, yard, trees, pools, shead

#10. On | 12,000 sq m total land available
house has $600\ m^2$
town house has $400\ m^2$ (10 t.h. = 4,000 sm)

Page 6

#10 H = 10 = 600 sq m and T = 15 = 400 sq. m

a $10\ H \times 600 = 6000$ sq m
$15\ T \times 400 = +6000$ sq m
12,000 sq m

b

Parkway	City Center	Both
has less units	more units	even amounts more of theres if compromise it is good

c $8\ H \times 600 = 4800\ m^2$
$18\ T \times 400 = +7200\ m^2$
$12,000\ m^2$
Yes the plan will work

d No, the plan will not work because the first has value of 600's, and the 2nd one has a value of 400's.

Decision Making

p6+7

e (1 plan of (12, 12) will work.

11.

Plan (H, T)	Area for H in m^2	Area for T in m^2	Total Area in m^2
(10, 15)	6000	6000	12000
(8, 18)	4800	7200	12,000
(12, 12)	7200	4800	12,000

page 7

12 The number represents the total at that point. It uses both the x and y axis values to get its value

13 $Q = 5H + 10T = 7000\ m^2$

3000 4000 = 7000

$R = 15H + 15T = 1500\ m^2$

9000 6000 = 15000

14.A It works because will the houses would fit with extra room for parks et.

B P, Q would work

15A It would be 20 m

B It would be 30 m

C See Graph

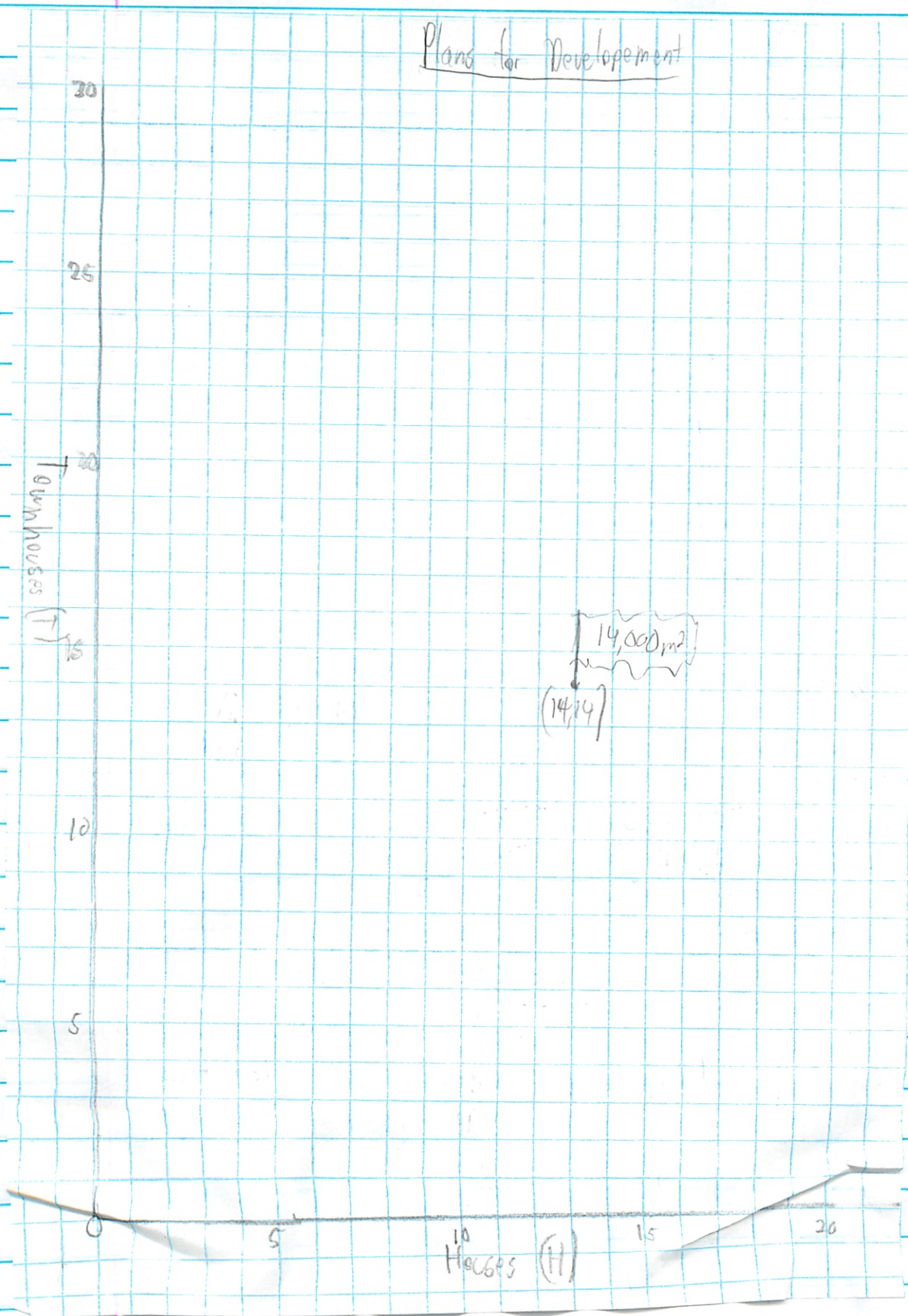
D 14,000 - 1200 = 2000 + 12, 12 / 2, 2 (14, 14)

1000 = H + T

2000 = 2H + 2T

Making Decisions

p 7



Decision Making

Her way

12/16

$12000 m^2$ land
H → $600 m^2$
T → $400 m^2$
H = # of houses
T = # of town houses

Houses	T, H
600H	400T
← 12,000 m^2 →	

$600H + 400T = 12000$

If $H = 0$, then $400T = 1200$

$T = 30$

(H, T)

always horizontal

(0,30)

# of T

$600H + 400T = 12000$
← Line of feasibility
everything has to [illegible]

(20,0)

# of H

(0,30)
(20,0)

[0-20, 30-0]

[-20, 30]

$\frac{T}{H}$ $\frac{30}{20} \rightarrow \frac{3}{2}$ called slope and fair exchange

For every 3 T lost, you get 2 H

$2H = 3T = 1200$ Excange 3 T for 2 H ← (Fair Exchange)

All plans using exact 12,000

[2, -3]

(0,30)	(8,19)	(16,6)
(2,27)	(10,15)	(18,3)
(4,24)	(12,12)	(20,0)
(6,21)	(14,9)	

Decision Making

12/16

Home work

Facts: 20000 m^2 total. Fair exchange:

500 m^2 house → ×4 → 2,000 m^2 Same Do it up here

400 m^2 T. House → ×5 → 2,000 m^2

Need to show

H = # of houses

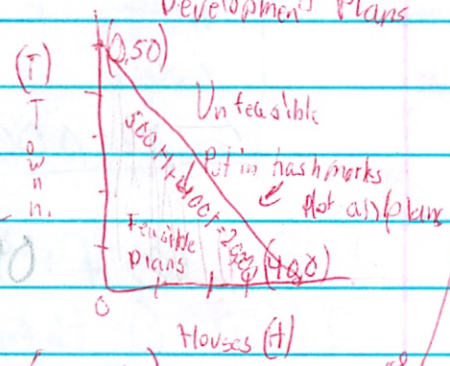
T = # of T. houses

(H,T) ← up here

Don't Need →

H	T
500H	400T
−20000 m^2	

Graph optinial Development Plans



Equtation: Need → 500 H + 400 T = 20000

Extrems: If H = 0, Then 400 T = 20000

20,000

T = 50 → (0,50)

If T = 0, then 500 H = 20000

H = 40 → (40,0)

Then Here

Fair Exchange: (Slope)

4T houses → 5 houses

$\frac{T}{H}$ $\frac{-4}{5}$ or $\frac{4}{-5}$ (H,T) → [-4,5] or [4,-5]

For every 5 Ts lost, you get 4 Hs, 5T = 4H = 2000

Exchange 5T for 4H

I wrote wrong answer

Plans 5-4: [3,4]

T	H
0	40
5	36
10	32
15	28
20	24
25	20
30	16

Flip

T	H
35	12
40	8
45	4
50	0

Flip #

H	T
40	0
36	5
32	10
28	15
24	20
20	25
16	30

[-4,5]

H	T
12	35
8	40
4	45
0	50

Desision Making

Homework

12/17

Facts

$25000\ m^2$ total

$600\ m^2$ House →

$500\ m^2$ Townhouse →

Definition

H = # of total houses (H, T)

T = # of total townhouses

Equation

Extrems $600H + 500T = 25000$

If $H = 0$, then $500T = 25000$

$T = 50 \rightarrow (0, 50)$

If $T = 0$, then $600H = 25000$

$H = 41.6\overline{6} \rightarrow (41.6\overline{6}, 0)$ or do it fraction $(41\frac{2}{3}, 0)$

$\begin{array}{r} 041 \\ 6\overline{)250}\ 40 \end{array}$

Fair Exchange Write it out

Slope Direction Pair

$600\ m^2\ H \rightarrow \times 5 \rightarrow 3{,}000\ m^2$

$500\ m^2\ T \rightarrow \times 6 \rightarrow 3{,}000\ m^2$

5 houses = 6 townhowes → Write like this $\frac{T}{H} \rightarrow \frac{6}{-5}$ or $\frac{-6}{5}$

$\frac{T}{H}$ or $\frac{6}{-5}$ or $\frac{-6}{5}$ or $[-5, 6]$ or $[5, -6]$

$[-5, 6]$ or $[5, -6]$ Circle one used

Feasible Plans Ordered Pairs

Slope wrong

$[5, -6]$

(0, 50)

(5, 44)

(10, 38)

(15, 32)

(20, 26)

(25, 20)

(30, 14)

(35, 8)

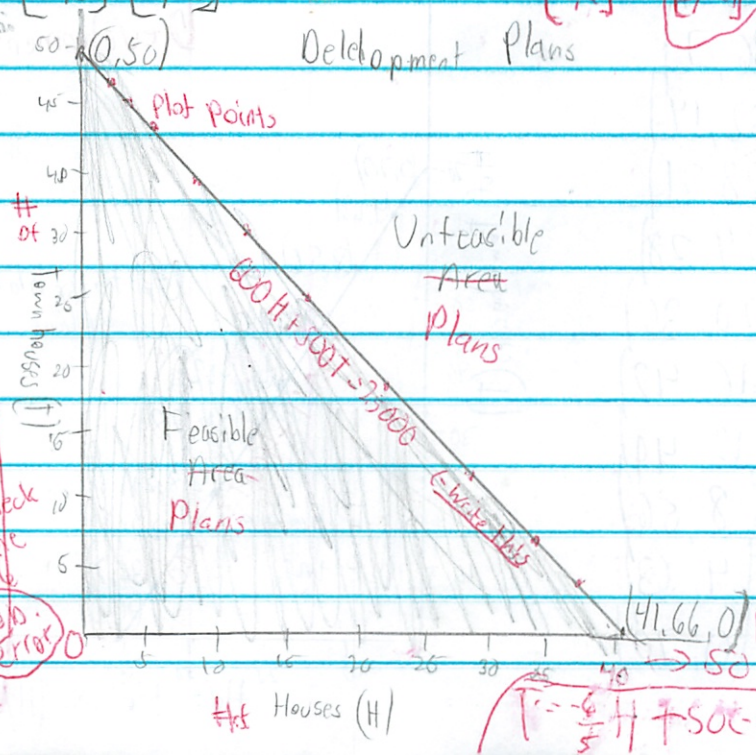
(40, 2)

Check the -6

Sub. error

Don't write this one → (41.66, 0)

Graph



$T = -\frac{6}{5}H + 50$ - Don't Need

Decision Making

Homework

12/18

2x

Facts

28000 m^2 total

700 m^2 house

400 m^2 townhouses

Definition

H = # of houses (H, T)

T = # of town houses

Equation

$700H + 400T = 28000$

If H=0, then $400t = 28000$

$T = 70 \rightarrow (0, 70)$

If T=0, then $700H = 28000$

$H = 48 \rightarrow (40, 0)$

Fair Exchange

Slope Direction Pair

House $\rightarrow 700\ m^2 \rightarrow \times 4 \rightarrow 2800$

Townhouses $\rightarrow 400\ m^2 \rightarrow \times 7 \rightarrow 2800$

4 Houses = 7 townhouses

$\frac{I}{H} = \frac{7}{4}$ or $\frac{I}{-4}$

$[4, 7]$ or $[-4, 7]$ Circle one used

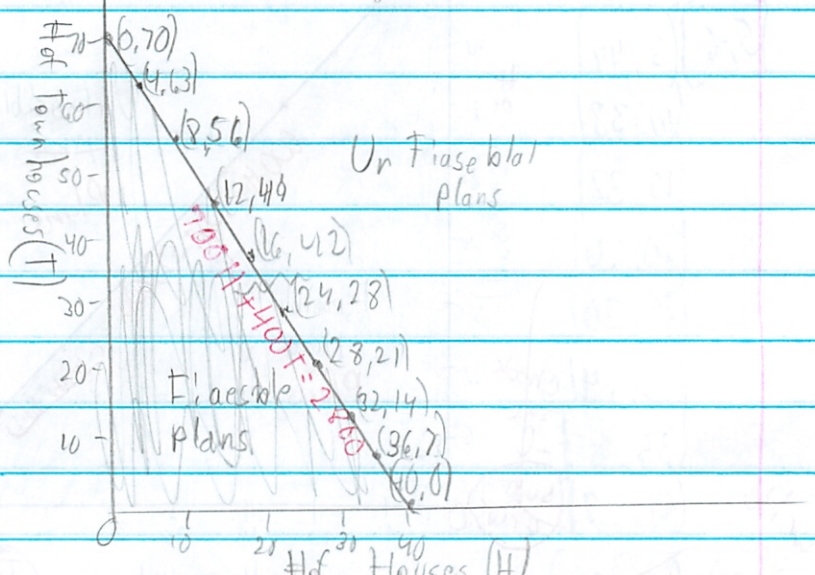
Graph

Feasible plans

$[-4, 7]$

(40, 0)
(36, 7)
(32, 14)
(28, 21)
(24, 28)
(20, 35)
(16, 42)
(12, 49)
(8, 56)
(4, 63)
(0, 70)

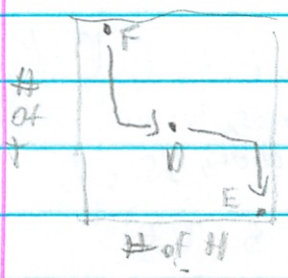
Development Plans



Un Feasible plans

Decision Making

p12 #3

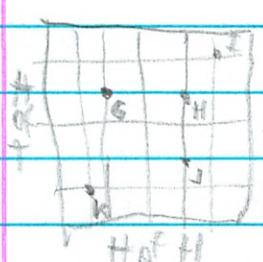


p12 12/22

The Developer was correct in saying that the areas were the same because if he points to D and E or F then it would be correct. If he doesn't he is just showing relations between points.

✗ The move is a fair exchange because they wanted you to use a ~~$\frac{3}{T}$~~ $\frac{T}{H}$ ratio so it was 0 area gained

#4



G = 9,000
H = 600
T = 400

G = (2, 4) = 9,000 Loose the [ ]

G → K → [-1, -3] = [600, -1200] - 1800, 9000 - 1800 = 7200 m^2

G → J → [+2, -2] = [+1200, -800] +400, 9000 + 400 = 9400 m^2

G → H → [+2, 0] = [+1200, 0] +1200, 9000 + 1200 = 10200 m^2

G → I [+3, +1] [1800, +400] 2200, 9000 + 2200 = 11200 m^2

k = 7200 m^2, J = 9400 m^2, H = 10200 m^2, I = 11200 m^2

#5 See Student Activity Sheet 3

Design Making

p 15

1/5/04

#1 $\boxed{\text{Coins}}$ (b = Dimes - Q = Quters, Has 16D + 14Q, D = 10, Q = 25

a $16D + 14Q = ?$

$1.60 + 3.50 = \boxed{\$5.10}$

d = # of dimes, 10 = value of 1D

q = # of quters, 25 = value of 1Q

$5.10 total $ (D, Q)

b → e $10d + 25q = 510$

Extreme If $q = 0$ then $10d = 510$

$d = 51$ (51, 0)

If $d = 0$ then $25q = 510$

$q = 20.4$ (0, 20.4)

(graphing extreme only)

Slope Fair Ex.

$D \to 10 \to \times 5 \to 50$

$Q \to 25 \to \times 2 \to 50$

$5D = 2Q$

$\frac{Q}{D}$ $\frac{-2}{5}$ or $\frac{2}{-5}$

(5, -2) or (5, 2)

Feasible Plans

(5, 2)

(51, 0)

(46, 2)

(41, 4)

(36, 6)

(31, 8)

(26, 10)

(21, 12)

(16, 14)

(11, 16)

(6, 18)

(1, 20)

Decsion Making

Facts p16 1/5

#3 Camping large boats holds 15p takes 12 min round trip
small " " 5 " " 8 " " "
280 p take trip

Definitions

p = passenger, min = minute, h = hour, L = large boat S = small boat
l = # of large boat trips, s = # of small boat trips (s, l)

teacher did (l, s) ↑ lost aplhabetly

Eaution

Extreams $5s + 15l = 280$

If $s = 0$, then $15l = 280$ ↙ Do fraction

$l = 18.66$ or $18\frac{2}{3}$ (0, 18.7) or $(0, 18\frac{2}{3})$

If $l = 0$, then $5s = 280$

$s = 56$ (56, 0)

Fair Exchange
Slope

Don't Need
$S \to 5p \to \times 3 \to 15p$
$L \to 15p \to \times 1 \to 15p$

$3S = 1L$

$\frac{1}{5}$ $\frac{-1}{3}$ or $\frac{1}{-3}$

[3, -1] or [-3, 1]

Feasble Plans

(56, 0)	
(53, 1)	(23, 11)
(50, 2)	(20, 12)
(47, 3)	(17, 13)
(44, 4)	(14, 14)
(41, 5)	(11, 15)
(38, 6)	(8, 16)
(35, 7)	(5, 17)
(32, 8)	(2, 18)
(29, 9)	
(26, 10)	

#3a Is (8, 16) Feasble?
$8S + 16L = ?$
$40 + 240 = 280 = 280$
Yes, the plan is feasble
b See Student Activity Sheet 4

Decision Making

p17

4! Lamping in 5hr.) L = 12m S = 8 min 5hr total or 300 min max

min, h, p, l, s, L, S, (s, L) same as before

$8s + 12l = 300$

If $s = 0$ then $12l = 300$

$l = 25$ (0, 25)

If $l = 0$ then $8s = 300$

$s = 37.5$ (37.5, 0)

$S \to 8 \to \times 3 \to 24$

$L \to 12 \to \times 2 \to 24$

$3S = 2L$

$\frac{L}{S}$ $\frac{2}{3}$ or $\frac{2}{-3}$

[3, -2] or [-3, 2]

(0, 25)

[3, -2] (3, 23) (24, 9)

(6, 21) (27, 7)

(9, 19) (30, 5)

(12, 17) (33, 3)

(15, 15) (36, 1)

(18, 13)

(21, 11)

4c There statement was good. It met both constraints

Decision Making

p 15 + 19

Flashback

#2 10 total, Q + D, Q = .25, D = .1 (D, Q)

Combos	Value	Total
(0, 10)	(0, 2.50)	$2.50
(1, 9)	(.10, 2.25)	$2.35 [-.15]
(2, 8)	(.20, 2)	$2.20
(3, 7)	(.30, 1.75)	$2.05
(4, 6)	(.40, 1.50)	$1.90
(5, 5)	(.50, 1.25)	$1.75
(6, 4)	(.60, 1)	$1.60
(7, 3)	(.70, .75)	$1.45
(8, 2)	(.80, .50)	$1.30
(9, 1)	(.90, .25)	$1.15
(10, 0)	(1, 0)	$1

Don't use [.10, -.25] for abberations

p19

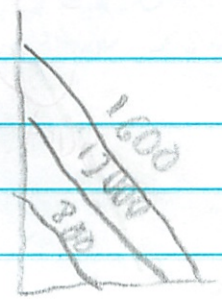
#6a The line would increase (16,000) or decrease (8,000) the feasble area. More or less houses or townhouse. Slop stays the same

could be bilt

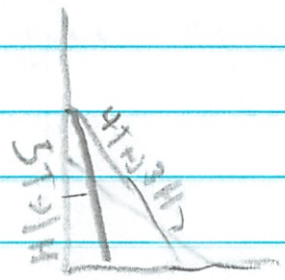
b. The line would move up and down + be parrall.

c The slope would be different

a+b



c



Flash Forward

Decision Making

p28

(T, F) ← then it would be reversed for a paper

($20 Bills, $50 Bills)

should do F = $50
T = $20

Sect C 12 × 20$ + 8 × 50$

1. 240 + 400 = 640$ - $640

Forgot Equation + Extremes

2+3a $20 → × 5 → $100
$50 → × 2 → $100

$\frac{\$50}{\$20}$ $\frac{F}{T}$ $\frac{-2}{5}$ or $\frac{+2}{-5}$

[5, -2] [-5, 2]

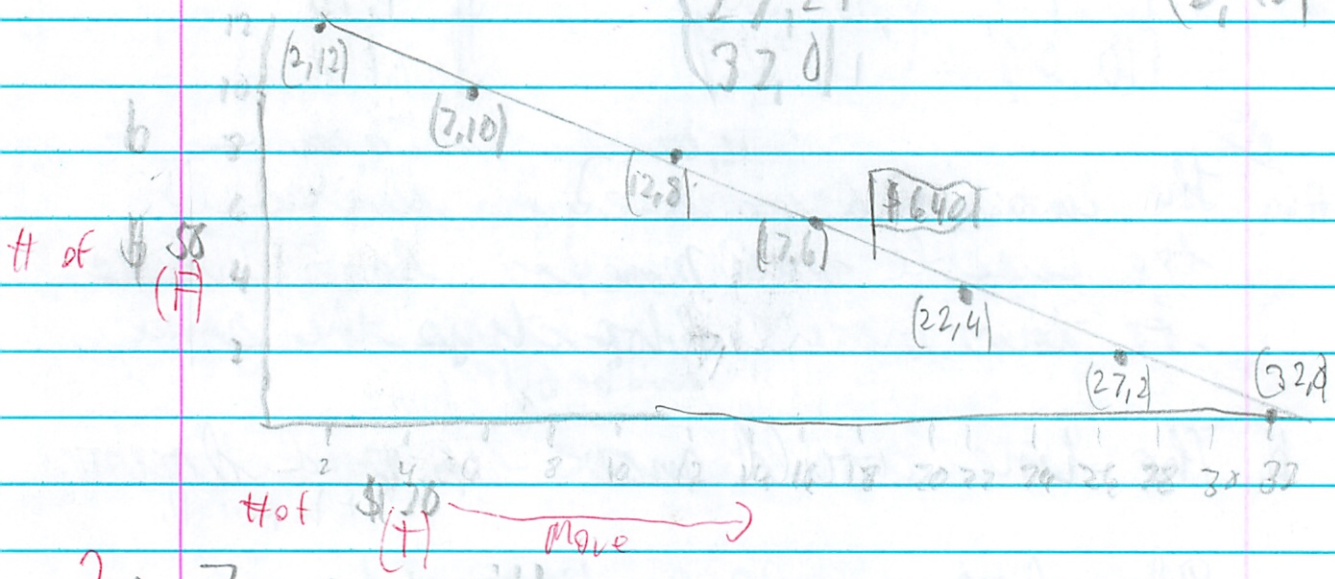
(12, 8)
(7, 10) [-5, 2]
(2, 12)

(12, 8) [5, -2]
(17, 6)
(22, 4)
(27, 2)
(32, 0)

Combos

(32, 0)
(27, 2)
(22, 4)
(17, 6)
(12, 8)
(7, 10)
(2, 12)

b



2c 7 combos possible

3b You can notice the change. slope

4. He has $640, can only have $20, $50 bills

sort of

Decision Making

p 21+22

1/8

More Constraints - At least 25 townhouses - $H+T \geq 25$

Inequalities
$<$
$>$
$\neq$
$\leq$
$\geq$

#1 H = # of houses, T = # of townhouses (H,T)

$H+T=25$

If $H=0$, then $T=25$ (0,25)

If $T=0$, then $H=25$ (5,0)

1 house = 1 townhouse

$\frac{T}{H}$ $\frac{-1}{1}$ or $\frac{1}{-1}$

[1,-1] or [-1,1]

#1 Ans.

(25,0)
[1,1] (24,1)
(23,2)
(22,3)
(21,4)
(20,5)

#3 See Student Act. Sheet 6 Write Equations

#4 Some plans are Area + # of Units

#5 It is better to set minimum units because you get more plans. Also looks better if you get more both good space the rule works better

(0,30)
→ Best (10,15)
(0,25)
(4,23)

page 22

#6 #1 - Fieasble 25 Units + Space, #2 Fieasble Space only, #3 Woughing Fisiable #4 Fieable 25 Units

#7a ~~84~~ plans 36 ← Doesn't care about this

b: (10,15) would be liked best

c: Yes they could do (5,22) or house ... need to be less

#8 That move would be good to H people. Also more plans in general would show up. More H plans would be available. Most plans would meet 1 constraint. I think the move would be good.

Desision Making

1/12

p23+24+25+26

#9a (6,5) (12,5) (16,15)

b. Yes it causes a problem, No plans work for all 3 constraints

#10: i - most important, iii - next, ii last importantance

page 24

#11 See student Activity Sheet 8

a. More then 24 units will work, You only get 1 plan (12,12) though

#12 More Land - See Student Activity Sheet 8 - Now 13400 m^2 area

(12,12) (12,12)

[+1,400 m^2] [+1h+1t]

[1house, 1thouse] (13,13) (14,12) (13,12)

[13,14] ← No law

#13 City (13,13) + House (14,12)

The plan chosen was (13,13)

Descision Making

p27-29 1/12

Tables: $10 \times 15 = 150\,m^2$ room S = # of Small tables $(1 \times 1 = 1\,m^2)$ L = # of Large t's. $(1 \times 2 = 2\,m^2)$

#1 150 small or 75 large tell how (If L = 0, then ...?) (1, s)

#3 New area = $60\,m^2$

a: Small $1\,m^2$, Large $2\,m^2$, Area $60\,m^2$

Equation

$1s + 2l = 60$

If $s = 0$ then $2l = 60$

$l = 30$ (30, 0)

If $l = 0$ then $s = 60$ (0, 60)

Sort of suppose to use $150\,m^2$

Slope

Small → $1\,m^2$ → ×2 → $2\,m^2$

Large → $2\,m^2$ → ×1 → $7\,m^2$

remember units

2 small = 1 large

$\frac{s}{1} = \frac{2}{1}$ or $\frac{2}{1}$

[1, -2] or [-1, 2]

Feasble Plans			
x	(30, 0)	(19, 22)	(8, 44)
[-1, 2] x	(29, 2)	(18, 24)	(7, 46)
x	(28, 4)	(17, 26)	(6, 48)
x	(27, 6)	(16, 28)	(5, 50)
x	(26, 8)	(15, 30)	(4, 52)
x	(25, 10)	(14, 32)	(3, 54)
x	(24, 12)	(13, 34)	(2, 56)
x	(23, 14)	(12, 36)	(1, 58)
x	(22, 16)	(11, 38)	(0, 60)
x	(21, 18)	(10, 40)	
x	(20, 20)	(9, 42)	

#4 This would eliminate about 1/3 of the biggest plans. All plans with an x here → 1 are no longer feasble

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Tables 2nd Constraint - large = 6 people, small = 4 people, 400 people to seat

#1 $6l + 4s = 200$

If $l = 0$ then $4s = 200$

$s = 50$ (0, 50)

If $s = 0$ then $6l = 200$

$l = 33\frac{1}{3}$ $(33\frac{1}{3}, 0)$

small → 4 people → ×3 → 12 people

large → 6 people → ×2 → 12 people

3 small = 2 large

$\frac{s}{1}$ $\frac{-3}{2}$ or $\frac{3}{-2}$

[2, -3] or [-2, 3]

Feasble plans			Both constraints
	(0, 50)	(22, 17)	(20, 20)
[2, -3]	(2, 47)	(24, 19)	(0, 50)
	(4, 44)	(26, 11)	(0, 60)
	(6, 41)	(28, 8)	(6, 40)
	(8, 38)	(30, 5)	(17, 30)
	(10, 35)	(32, 2)	(6, 42)
	(12, 32)		(12, 36)
	(14, 29)		(8, 38)
	(16, 26)		
	(18, 23)		
	(20, 20)		

Decision Making

Mt. Sparta

1/13

300 people total
10 people in a Van
30 people in a bus
$10V + 30B = 300$
If $V = 0$ then $30B = 300$
$B = 10$ (0,10)
If $B = 0$ then $10V = 300$
$V = 30$ (30,0)

V = # of people in a Van
B = # of people is a bus
(V,B)

Feasble Plans (30,0) (12,6)
[-3,1] (27,1) (9,7)
(24,2) (6,8)
(21,3) (3,9)
(18,4) (0,10)
(15,5)

Slope
Van → 10 people → ×3 → 30 people
Bus → 30 people → ×1 → 30 people
Don't need

3 vans = 1 bus

Above line Shade

$\frac{B}{V}$ $\frac{1}{3}$ or $\frac{1}{-3}$
[3,-1] or [-3,1]

Prawn line

4 hr or 240 min total - 10 min van - 15 min bus
$10V + 15B = 240$
If $V = 0$ Then $15B = 240$
$B = 16$ (0,16)
If $B = 0$ Then $10V = 240$
$V = 24$ (24,0)

Feable Plans (0,16) (15,6)
[3,-2] (3,14) (18,4)
(6,12) (21,2)
(9,10) (24,0)
(12,8)

Van → 10 min → ×3 → 30 min
Bus → 15 min → ×2 → 30 min
3 Van = 2 bus
$\frac{B}{V}$ $\frac{2}{3}$ or $\frac{2}{-3}$ Remember Words
[3,-2] or [-3,2]

Both ~~(17,4)~~ (18,4) ← Correct
(0,16)
(0,10)
(10,7)
(3,14)
(6,7)
+ more

~~#5~~ (~~17~~, 4) is the best plan
Circle!
#15 Ans 18 (0,10) takes less time #13a → Need to prove (7,9)
Time 70,135 = 205
People 70,270 = 340

Decision Making

Darts

1/14

Outer 5 points (F) O = # of Outer rim points
Inner 2 points (T) I = # of Inner rim points
Total 40 points (I, O) Use (F, T) (Five, Two)

#1 $(6 \times 5) + (12 \times 2) = 54$ No he is not correct, because this configuration scores him 54 points.
30 24

#2-6 $2I + 5O = 40$

If $I = 0$, then $5O = 40$
$O = 8 \rightarrow (0, 8)$

If $O = 0$, then $2I = 40$
$I = 20$ (20, 0)

Plans: (20, 0) [5, 2] (15, 2) (10, 4) (#2) (5, 6) (0, 8) (#3) 8

#4 5 Inner = 2 Outter

$\frac{O}{I} = \frac{2}{5}$ or $\frac{2}{-5}$

[5, -2] or [-5, 2]

#4,6 - See Graph

#5 throws Can only shoot 15 or fewer times

$1I + 1O = 15$

If $I = 0$ then $1O = 15$ (0, 15)

If $O = 0$, then $1I = 15$ (15, 0)

1 Inner = 1 Outer

$\frac{O}{I} = \frac{-1}{1}$ or $\frac{1}{-1}$

[1, -1] or [-1, 1]

Plans (0, 15) [1, -1] (1, 14) (2, 13) (3, 12) (4, 11) (5, 10) (6, 9) (7, 8) (8, 7) (9, 6) (10, 5) (11, 4) (12, 3) (13, 2) (14, 1) (15, 0)

#7 $15 \times 5 = 75$ points

#8 $2 \times 5 + 13 \times 2 = 36$ points; It would get you 36 points.

#9 Yes it is, See diagram

Points	36	6	41 ✓
Shots	7	3	10 ✓

[7, 3]

#10 8 shots is the least

#11 (8, 0) (10, 5) (15, 0) (6, 5) (4, 10) (9, 3) Need to prove