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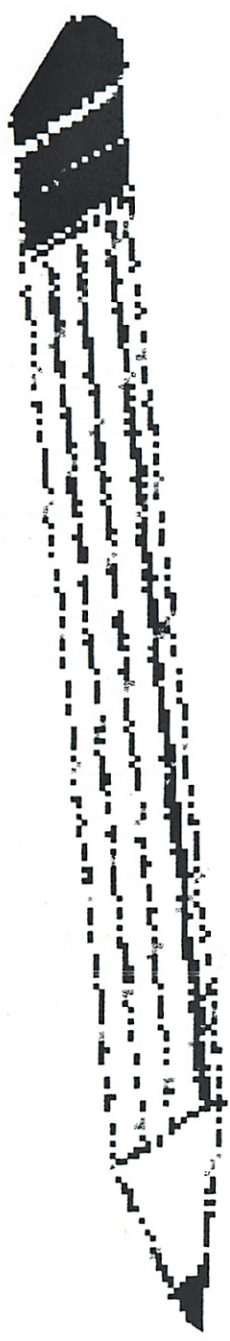
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Parent(s)/Guardian(s) Name(s)

Anne Imhof

Steve Plasmeier

Book #: 5-83



Welcome to 7th grade ...

Math expectations

Grading key
X
A
B
C
D

- *Be on time
- *Be prepared ... seated with pencil, paper, book & homework out
- *Be involved ... raise your hand to ask or answer questions
- *Be polite & respectful



Homework

- *You will receive homework at least 4 times a week
- *Grading -- you will lose one-half point from your quarter average for any unacceptable assignment
- *Acceptable assignment -- copy the problem, show work (like examples given in class), identify answer
- *If you are unable to complete a homework assignment for any reason ... bring a note from your parent/guardian on the due day
- *If you are absent from school ... call a classmate and make a reasonable effort to do the assignment



Grading

*Ratio of your point total to total points -- converted to a percent

*Includes

Homework -- described above

Tests -- 100 Points

Pop Quizzes -- 10 to 15 Points -- unannounced

Quizzes -- 20 to 60 Points -- announced

Projects -- 50 to 200 Points



Welcome to 7th Grade Math !!

Daily Math Needs

- 1) 1" Binder
- 2) Spiral Notebook -- 1 Subject with 3 holes
- 3) Pencils (NO erasable pens !!!)
- 4) Three-holed Pencil case for binder
- 5) Glue Stick
- 6) Colored pencils (no more than 12)
- 7) HOMEWORK
 - (Answers must be given in complete)
 - (sentences, using facts to justify them,)
 - (unless otherwise noted.)
- 8) Home needs:
 - ruler, compass, protractor
 - Calculator (Ab/c key preferred)



Advanced Integrated Mathematics 7

Below is an annotated list of the *Mathematics in Context* units we will work through this year. The units are organized into four content strands: number, algebra, geometry and statistics. Connections are a key – connections between mathematics and meaningful problems in the real world.

- Comparing Quantities* introduces students to informal methods for solving systems of equations through nonroutine problem situations.
- Graphing Equations* introduces the study of lines. Students graph linear relationships and study linear equations.
- Decision Making* focuses on using a graph to organize information, represent constraints and distinguish feasible from unfeasible possibilities.
- Get the Most Out of It* covers solutions to systems of equations and inequalities, as well as how to optimize solutions when more than one is possible.
- Triangles & Patchwork* investigates the concept of similar triangles and uses relationships between parallel lines and angles to prove two triangles similar.

Other resources may be utilized to supplement these Units.

Michael Plasmeier

7.13.23

FRACTIONS & DECIMALS SKILLS TEST

day 1

Each correct answer is worth 1 point. Total possible points = 100.

For 1-6, match the correct decimal letter (below right) with the written decimals (below left).

- | | | |
|----------|--|-----------|
| <u>C</u> | 1. forty-two thousandths | A. 4.42 |
| <u>D</u> | 2. forty-two hundredths | B. 4.402 |
| <u>E</u> | 3. forty-two ten thousandths | C. 0.042 |
| <u>A</u> | 4. four and forty-two hundredths | D. 0.42 |
| <u>B</u> | 5. four and four hundred two thousandths | E. 0.0042 |
| <u>F</u> | 6. four and four hundredths | F. 4.04 |

THT

7. Write the factors of 24. 1, 2, 3, 4, 6, 12, 24
8. Write the factors of 13. 1, 13
9. Write the prime factors of 12. 2, 3, 3 *not needed*
10. Write the least common multiple of 4 and 5. 20
11. Write the least common denominator of $\frac{1}{7}$ and $\frac{4}{3}$. 21
12. Write the greatest common factor of 15 and 30. 15
13. Write all the common factors of 15 and 45. 1, 3, 5, 15
14. Write all the common factors of 6, 18, and 24. 1, 2, 3, 6

9
1
12
1
6
2
3
3

For 15-20, tell what place is in bold type by writing the correct letter.

(a) ones (b) tenths (c) hundredths (d) thousandths (e) ten thousandths

- | | | | |
|----------|------------|----------|------------|
| <u>e</u> | 15. 6.1372 | <u>a</u> | 18. 31.004 |
| <u>b</u> | 16. 4.011 | <u>c</u> | 19. 9.09 |
| <u>a</u> | 17. 0.266 | <u>d</u> | 20. 16.207 |

13
3/45
5/45

For 21-26, write Y if a fraction is in lowest terms, or N if it is not.

- | | | | |
|----------|---------------------|----------|--------------------|
| <u>Y</u> | 21. $\frac{7}{20}$ | <u>Y</u> | 24. $\frac{8}{15}$ |
| <u>Y</u> | 22. $\frac{11}{13}$ | <u>N</u> | 25. $\frac{3}{39}$ |
| <u>N</u> | 23. $\frac{9}{24}$ | <u>N</u> | 26. $\frac{7}{21}$ |

N

over

For 27-32, place these fractions in order from smallest to largest.

$\frac{1}{2}$ $\frac{2}{9}$ $\frac{1}{3}$ $\frac{3}{4}$ $\frac{2}{3}$ $\frac{1}{4}$ $\frac{2}{5}$

27. $\frac{2}{9}$ 28. $\frac{1}{4}$ 29. $\frac{1}{3}$ 30. $\frac{1}{2}$ 31. $\frac{2}{3}$ 32. $\frac{3}{4}$

For 33-38, reduce each fraction to its lowest terms.

33. $\frac{12}{15}$ $\frac{4}{5}$ 34. $\frac{16}{20}$ $\frac{4}{5}$ 35. $\frac{9}{12}$ $\frac{3}{4}$ 36. $\frac{21}{49}$ $\frac{3}{7}$ 37. $\frac{9}{45}$ $\frac{1}{5}$ 38. $\frac{28}{42}$ $\frac{2}{3}$

For 39-44, write T or F to tell whether each pair of fractions is equivalent.

39. $\frac{3}{5} = \frac{15}{25}$ T 40. $\frac{9}{12} = \frac{2}{3}$ F 41. $\frac{4}{22} = \frac{2}{11}$ T 42. $\frac{7}{12} = \frac{42}{60}$ F 43. $\frac{2}{3} = \frac{40}{66}$ F 44. $\frac{11}{15} = \frac{22}{33}$ F

For 45-49, round these decimals to the place in bold type.

45. 0.4632 0.46 46. 173.06 173 47. 0.275 0.28 48. 12.0361 12.0 49. 0.0055 0.006

For 50-54, change the decimals to fractions or the fractions to decimals. (Round decimals to the nearest hundredth.)

50. $\frac{7}{12}$ 0.58 51. $\frac{2}{3}$ 0.66 0.67 52. 0.080 $\frac{8}{100}$ $\frac{2}{25}$ 53. 9.33 $9\frac{1}{3}$ 54. 73.04 $73\frac{1}{25}$

For 55-59, change the fractions to percents. (Round percents to nearest whole percent.)

55. $\frac{3}{4}$ 75% 56. $\frac{7}{8}$ 87.5% 57. $\frac{9}{12}$ 75% 58. $\frac{9}{5}$ 180% 59. $\frac{1}{5}$ 20%

For 60-71, change the decimals to percents and the percents to decimals. (Do not round any decimals.)

60. 0.36 36% 61. 14.7% 0.147 62. 1.950 195% 63. 0.056% 0.0056 64. 27.261 2726.1% 65. 3490% 34.9 66. 0.0795 7.95% 67. 7.36% 0.0736 68. 0.0046 0.46% 69. 116.43% 1.1643 70. 33.06 3306% 71. 226.7% 2.267

Handwritten calculations for rounding and conversions:

- 12.5 (circled)
- 173.06 rounded to 173
- 0.275 rounded to 0.28
- 12.0361 rounded to 12.0
- 0.0055 rounded to 0.006
- $\frac{7}{12}$ converted to 0.58
- $\frac{2}{3}$ converted to 0.66 and 0.67
- 0.080 converted to $\frac{8}{100}$ and $\frac{2}{25}$
- 9.33 converted to $9\frac{1}{3}$
- 73.04 converted to $73\frac{1}{25}$
- $\frac{3}{4}$ converted to 75%
- $\frac{7}{8}$ converted to 87.5%
- $\frac{9}{12}$ converted to 75%
- $\frac{9}{5}$ converted to 180%
- $\frac{1}{5}$ converted to 20%
- 0.36 converted to 36%
- 14.7% converted to 0.147
- 1.950 converted to 195%
- 0.056% converted to 0.0056
- 27.261 converted to 2726.1%
- 3490% converted to 34.9
- 0.0795 converted to 7.95%
- 7.36% converted to 0.0736
- 0.0046 converted to 0.46%
- 116.43% converted to 1.1643
- 33.06 converted to 3306%
- 226.7% converted to 2.267

74, 78, 79

Fractions & Decimals SKILLS TEST

day 2

For 72-81, solve the problems below. Write the answers on the lines. (Round decimals to the nearest hundredth.)

- 72. $1\frac{2}{3} + 2\frac{6}{10}$ 4 $\frac{4}{15}$
- 73. $\frac{9}{5} + \frac{2}{5}$ 2 $\frac{1}{5}$
- 74. $1.593 + 164.001$ 165.594
- 75. $6\frac{3}{4} - 6\frac{3}{5}$ $\frac{3}{20}$
- 76. $\frac{5}{13} \times \frac{4}{5}$ $\frac{4}{13}$
- 77. $\frac{4}{5} \div \frac{7}{8}$ $\frac{32}{35}$
- 78. $1.8 \div 0.36$ 5
- 79. 22.7×66.66 1513.182
- 80. $2\frac{1}{2} \div 4\frac{2}{3}$ $\frac{15}{28}$
- 81. $7\frac{1}{10} \times 1\frac{9}{5}$ 19 $\frac{22}{25}$

Round

Round

Handwritten calculations for problems 72-81:

- 72: $1\frac{2}{3} + 2\frac{6}{10} = 1\frac{2}{3} + 2\frac{3}{5} = 1\frac{4}{15} + 2 = 3\frac{4}{15}$
- 73: $\frac{9}{5} + \frac{2}{5} = \frac{11}{5} = 2\frac{1}{5}$
- 74: $1.593 + 164.001 = 165.594$
- 75: $6\frac{3}{4} - 6\frac{3}{5} = 6\frac{15}{20} - 6\frac{12}{20} = 6\frac{3}{20} - 6\frac{12}{20} = -\frac{9}{20}$ (Note: student wrote $\frac{3}{20}$)
- 76: $\frac{5}{13} \times \frac{4}{5} = \frac{4}{13}$
- 77: $\frac{4}{5} \div \frac{7}{8} = \frac{4}{5} \times \frac{8}{7} = \frac{32}{35}$
- 78: $1.8 \div 0.36 = 5$
- 79: $22.7 \times 66.66 = 1513.182$
- 80: $2\frac{1}{2} \div 4\frac{2}{3} = \frac{5}{2} \div \frac{14}{3} = \frac{5}{2} \times \frac{3}{14} = \frac{15}{28}$
- 81: $7\frac{1}{10} \times 1\frac{9}{5} = 7\frac{1}{10} \times 1\frac{18}{10} = 7\frac{1}{10} \times 1\frac{9}{5} = 7\frac{1}{10} \times 2\frac{18}{10} = 7\frac{1}{10} \times 2\frac{9}{5} = 7\frac{1}{10} \times 2\frac{18}{10} = 14\frac{18}{10} = 14\frac{9}{5} = 14\frac{18}{10} = 14\frac{9}{5} = 19\frac{4}{5} = 19\frac{8}{10} = 19\frac{22}{25}$

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

$\frac{5}{2} \times \frac{3}{14} = \frac{15}{28}$

$0.36 \overline{) 1.80}$

2

$108 \overline{) 72}$

2

$36 \overline{) 72}$

2

1133320

$+ 1333200$

1513182

71

$\times 14$

984

$\downarrow 710$

994

$71 \times \frac{14}{5} = 994$

$\frac{994}{5} = 198\frac{4}{5} = 198\frac{8}{10} = 198\frac{16}{20} = 198\frac{22}{25}$

over

88, 90, 91, 94, 100

For 82-92, write the answers on the lines.

- b 82. Which of these fractions is smallest?
 a. $\frac{1}{7}$
 b. $\frac{2}{16}$ $\frac{1}{8}$
 c. $\frac{2}{13}$ $\frac{1}{6.5}$
 d. $\frac{3}{11}$
 e. $\frac{4}{20}$ $\frac{1}{5}$

- c 83. Which is the correct answer to this problem, in lowest terms?
 $\frac{3}{12} \div \frac{5}{9}$
 a. $\frac{27}{60}$ $\frac{9}{20}$
 b. $\frac{15}{108}$ $\frac{1}{4} \times \frac{9}{3} = \frac{9}{12}$
 c. $\frac{9}{20}$
 d. $\frac{5}{36}$

- d 84. Which numeral below means sixty-six and sixty-six ten thousandths?
 a. 66.066
 b. 0.06666
 c. 66.660
 d. 66.0066

- c 85. Which is the correct decimal for 19.076%?
 a. 1.9076
 b. 1907.6
 c. 0.19076
 d. 19.076
 e. 190.76

- d 86. Which fraction is in lowest terms?
 (Simplest form)
 a. $\frac{6}{21}$
 b. $\frac{8}{4}$
 c. $\frac{7}{49}$
 d. $\frac{9}{11}$
 e. $\frac{62}{4}$

- a 87. What percent of 55 is 11?
 a. 20%
 b. 50%
 c. 55%
 d. 2%

- b 88. What is the answer to $68.3 \div 0.01$?
 a. 0.683
 b. 6830
 c. 6.83
 d. 683.0

- d 89. What is the answer to 0.0422×0.001 ?
 a. 422.001
 b. 422,001
 c. 0.00422
 d. 0.0000422

- 10 90. 13 is what percent of 78?
 (Round to the nearest whole percent.)
 $\frac{13}{78} = \frac{1}{6} \approx 16.7\%$

- 37 91. What number is 75% of 120?
 $120 \times 0.75 = 90$

- 28 92. What number is 40% of 70?
 $70 \times 0.4 = 28$

For 93-100, solve these proportions to find x.

- 12 93. $\frac{3}{2} = \frac{x}{8}$
~~20~~ 94. $\frac{10}{26} = \frac{x}{13}$
27 95. $\frac{15}{x} = \frac{5}{9}$
~~60~~ 96. $\frac{12}{20} = \frac{36}{x}$
5 97. $\frac{x}{8} = \frac{20}{32}$
14 98. $\frac{10}{x} = \frac{30}{42}$
6 99. $\frac{21}{x} = \frac{7}{2}$
~~18~~ 100. $\frac{27}{9} = \frac{42}{x}$

$\frac{100}{78} \approx 1.28$
 $\frac{100}{78} = 1 \frac{2}{3} = 1 \frac{14}{21} = 1 \frac{14}{21}$
 $\frac{100}{78} = 1 \frac{14}{21} = 1 \frac{14}{21}$
 $\frac{100}{78} = 1 \frac{14}{21} = 1 \frac{14}{21}$

SCORE: Total Points 83% out of a possible 100 points

$\frac{100}{17} = 5.88$
 $\frac{100}{17} = 5.88$

Math

Comparing Quantities



Math

Comparing
Quantities



Comparing Quantities

Classwork

Homework

A. Compare & Exchange (Pages 1 - 4)

#s ~~1-5, 2~~

³⁻
~~#s 6, 8 - 10~~

B. Looking at Combinations (Pages 5 - 14)

#s 1 - 9

#s 24, 25, 26c

4, 5, 6
8-15

#s 10 - 15 ; Page 33 Section B

#s 26

C. Finding Prices (Pages 15 - 20)

Glasses/shorts do as
exchange & combination

17 do as

exchange & combination

D. Notebook Notation (Pages 21 - 26)

#s 1 - 7

#s 8, 11

E. Equations

#s 1 - 8

#s 13 - 17

Quiz -- Comparing Quantities using Exchange, Combinations,
Notebooks & Equations

*** THIS IS A TENTATIVE SCHEDULE ***

Name _____

Student Activity Sheet 1

Use with *Comparing Quantities*, pages 7 and 8.

Use the combination chart below to solve the following problems:

8. Fill in the white squares with the prices of the combinations.
9. Circle the price of two erasers and three pencils.

Costs of Combinations (in cents)

9										
8										
7			155					805		
6		115	140	165						
5	75	100	125	150	175	200				
4	60	85	110	135	160	185	210			
3	45	70	95	120	145	170	195			
2	30	55	80	105	130	155	180			
1	15	40	65	90	115	140	165	190		
0	0	25	50	75	100	125	150	175		
	0	1	2	3	4	5	6	7	8	9

Number of Erasers

3
25
27
175

3
15
27
105

1.75
1.05
280

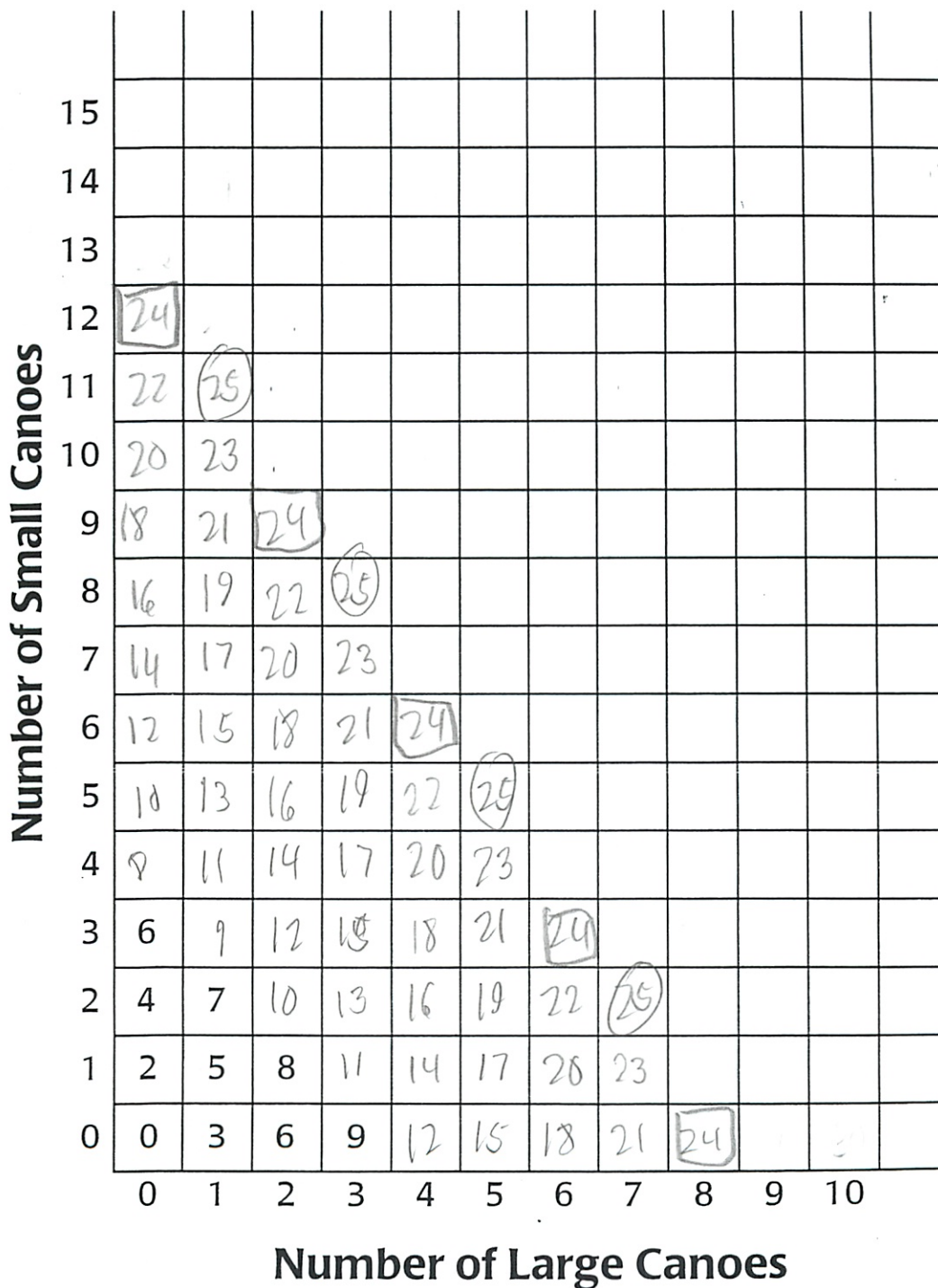
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Student Activity Sheet 2

Name _____

Use with *Comparing Quantities*, page 12.

Numbers of People on Canoe Trip



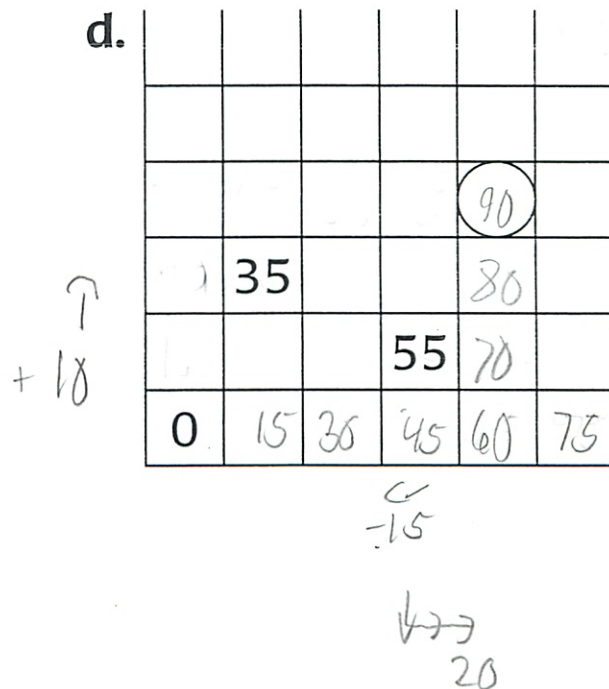
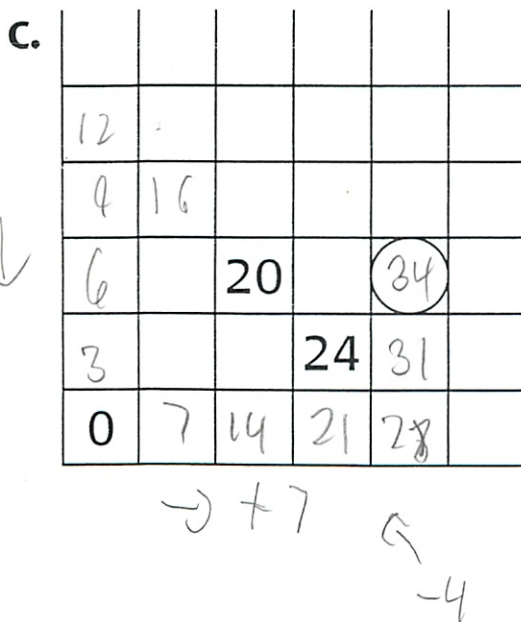
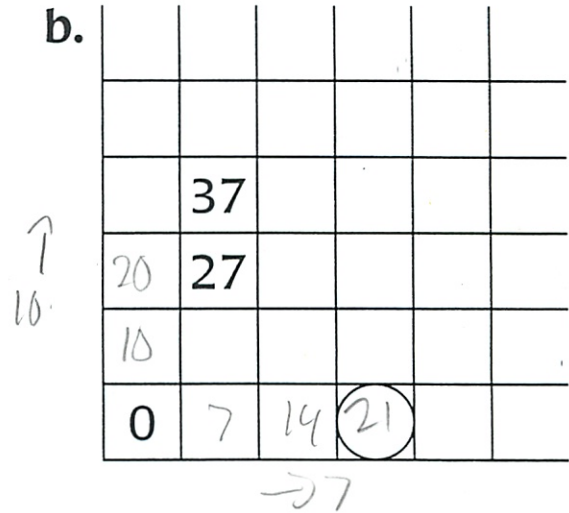
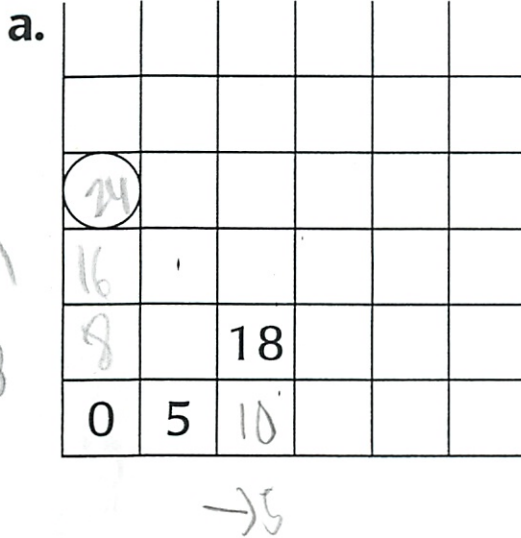
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Student Activity Sheet 3

Name _____

Use with *Comparing Quantities*, page 13.

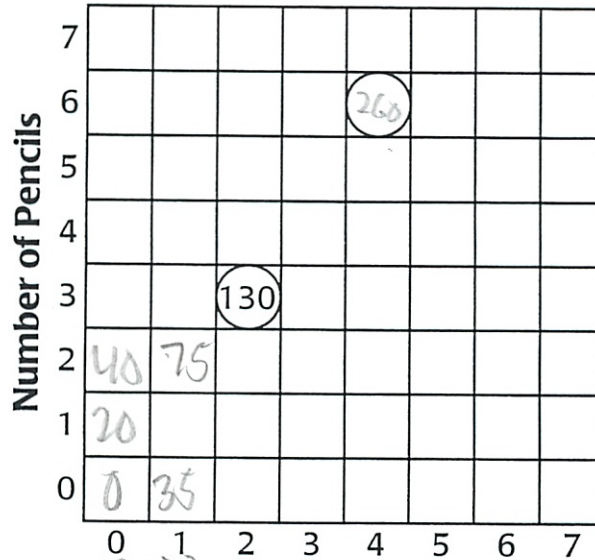
26. In the combination charts below, some of the squares have circles in them. Find the numbers that go in the circles. Describe the strategy that you used to find each number.



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Use with *Comparing Quantities*, page 27.

Costs of Combinations (in cents)



Number of Erasers

$\uparrow +130$
 $\downarrow -55$
 $\uparrow +20$
 $\rightarrow +35$

Notebook

Line	Era	Pen	Total	Move
1	2	3	130	
2	4	6	260	
3	1	2	75	
<hr/>				
4	1	1	55	L1-L3
5	4	4	220	L5+4
6	0	2	40	L2-L5
7	0	1	20	L6-7
8	1	0	35	L4-L1

~~$2E + 3P = 130$
 $1E + 2P = 75$
 $\times 2 \quad 2E + 4P = 150$
 $\times 1 \quad 2E + 3P = 130$~~

See Back

$$\begin{array}{r}
 2E + 3P = 130 \\
 1E + 2P = 75
 \end{array}
 \begin{array}{l}
 \boxed{\times 1} \\
 \boxed{\times 2} \uparrow \\
 -1 \downarrow
 \end{array}
 \begin{array}{r}
 2E + 3P = 130 \\
 2E + 4P = 150 \\
 \hline
 0E + 1P = 20 \rightarrow 1P = 20¢
 \end{array}$$

$$\begin{array}{r}
 1E + 2P = 75 \\
 -40¢ \\
 1E + 40 = 75 \\
 \boxed{1E = 35} \text{ --- } 1E = 35¢
 \end{array}$$

Notebook

Marlo's p 22

Line	taco	Solid	Drinks	Total	Work
1	2	4	0	10	
2	1	2	3	8	
3	3	0	2	9	
4	1	2	0	5	L1 = 2
5	1	0	1	3	L3 = 3
6	2	2	1	8	L4 + L5
7	4	2	3	14	L3 + L4
<hr/>					
8	0	0	3	3	L7 - L4
9	0	0	1	1	L8 = 3
10	1	0	0	2	L5 - L4
11	0	2	0	3	L4 - L10
12	0	1	0	1	L11 = 2

Notebook

Chicken Revisit p 23

Line	Small	Med	Large	Weight in kg	Work
1	0	1	1	10.6	
2	1	0	1	8.5	
3	1	1	0	6.1	
<hr/>					
4	2	2	2	25.2	L1 + L2 + L3
5	1	1	1	12.6	L4 = 2
6	1	0	0	2	L5 - L1
7	0	1	0	4.1	L5 - L2
8	0	0	1	6.5	L5 - 3
9					
10					
11					

S - weight of small chicken

M - weight of medium chicken

L - weight of large chicken

Notebook 3

Burger p24

Line	Fries	Shake	Burger	Total	Move
1	1	0	1	3.40	
2	0	1	1	4.20	
3	1	1	0	2.80	
<hr/>					
4	2	2	2	10.40	L1+L2+L3
5	1	1	1	5.20	L4 ÷ 2
6	1	0	0	1	L5 - L2
7	0	1	0	1.80	L5 - L1
8	0	0	1	2.40	L5 - L3

Fries = \$ 1
 Shake = \$ 1.80
 Burger = \$ 2.40

5.20
 - 3.40
 1.80

5.20
 - 2.80
 2.40

Notebook 4

Flowers p25

Line	Rose	Lilly	Mum	Total	Move
1	0	2	6	6.20	
2	6	0	4	8.60	
3	4	2	0	5.80	
4	6	2	10	14.80	L1 x L2
5	3	1	5	7.40	L4 ÷ 2
6	7	3	5	12.40	L5 + L3
7	1	3	1	3.80	L6 - L2
8	4	12	4	16.20	L7 x 4
9	0	10	4	10.20	L8 - L3
10	0	5	2	5.10	L9 ÷ 2
11	0	15	6	15.30	L10 x 3
12	6	13	0	9.10	L11 - L1
13	0	1	0	.70	L12 ÷ 3

Lilly 70
 Rose 904
 Mum 806
 → can't on #6

.70
 9.10

3
 3.80
 + 1.40
 5.20

Notebook 5

Amusement Park p 26

Line	Wheel	House	Coaster	Total	More
1	4	2	4	18.40	
2	5	0	5	18	
3	0	0	10	17	
<hr/>					
4	0	0	1	1.70	L3 = 10
5	0	0	5	9.50	L4 x 5
6	5	0	0	9.5	L2 - 25
7	1	0	0	1.90	L6 = 5
8	1	0	1	3.60	L4 + L7
9	4	0	4	14.40	L8 x 4
10	0	2	0	4	L1 - L9
11	0	1	0	2	L10 = 2

Coaster = \$1.70
 Wheel = \$1.90
 House = \$2

3
 1.70
 2.50
 8.50
 1.90
 9.50

Notebook 6

Flowers Cont p 25

Line	Rose	Lilly	Mum	Total in \$	More
14	6	18	6	22.80	L7 x 6
15	6	8	2	12.60	L14 - L9
16	2	6	2	7.60	L7 x 2
17	4	2	0	5.00	L16 - L15
18	0	2	0	1.40	L13 x 2
19	4	0	0	3.60	L18 - L17
20	1	0	0	0.90	L10 = 4
21	2	16	6	17.80	L14 - L3
22	0	10	4	10.20	L21 - L16
23	0	10	0	7.00	L13 x 10
24	0	0	4	3.20	L22 - L23
25	0	0	1	0.80	L24 = 4

of Each

30

16

10

6

2

4

1

24

14

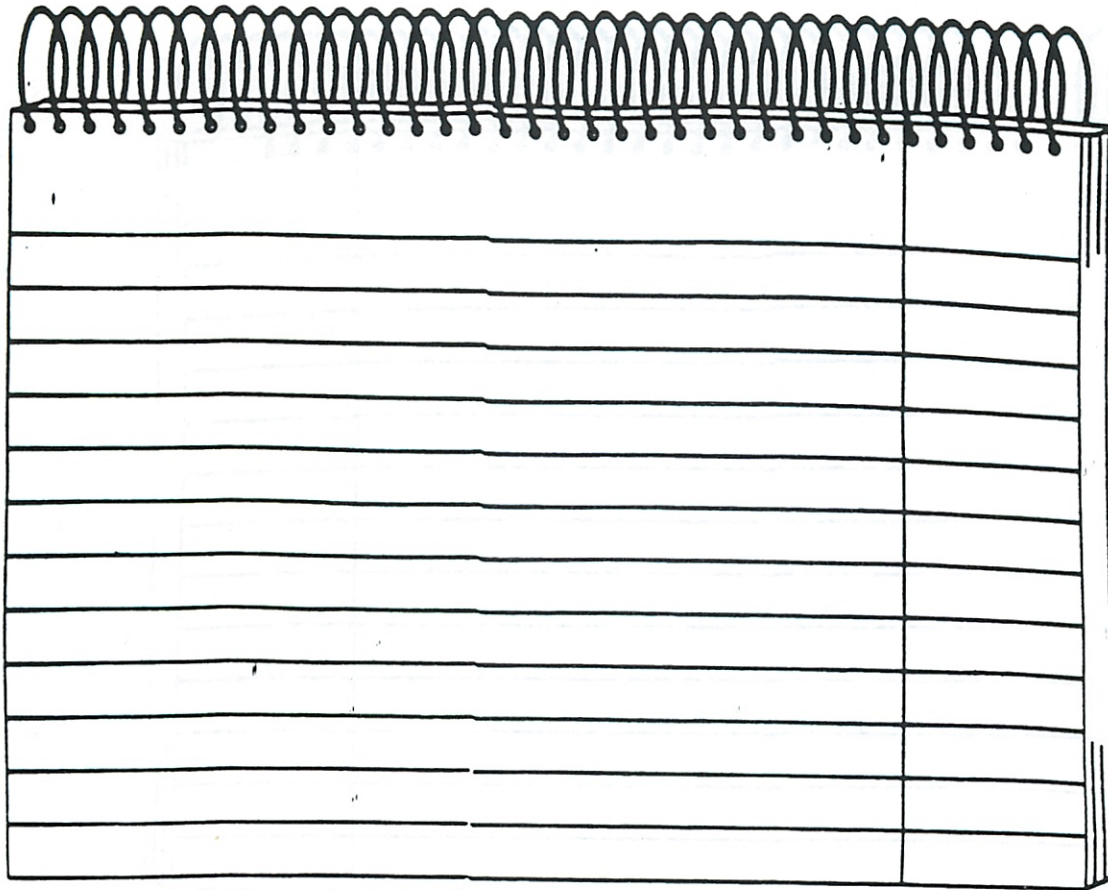
10

4

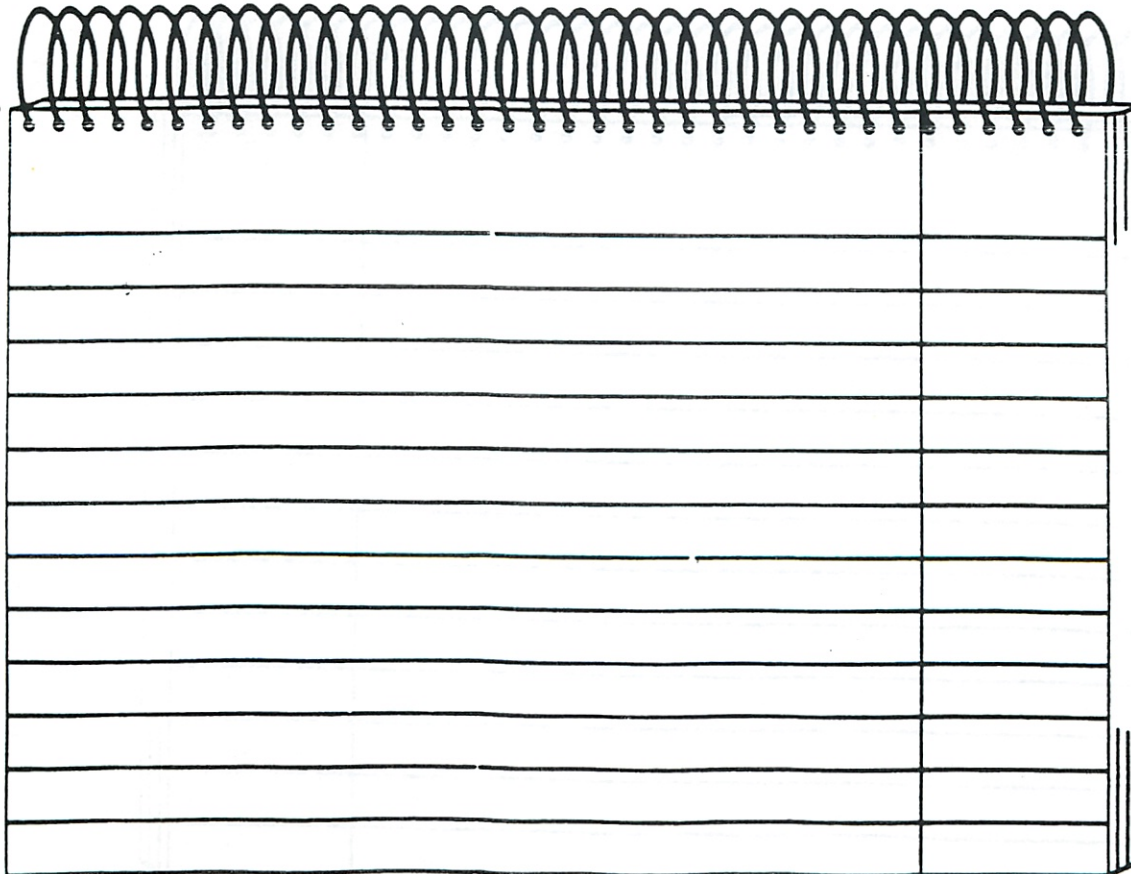
1

1.35
 6 | 8.28
 1.36
 3 | 4.10
 4 | 3.80
 2.6
 22.80

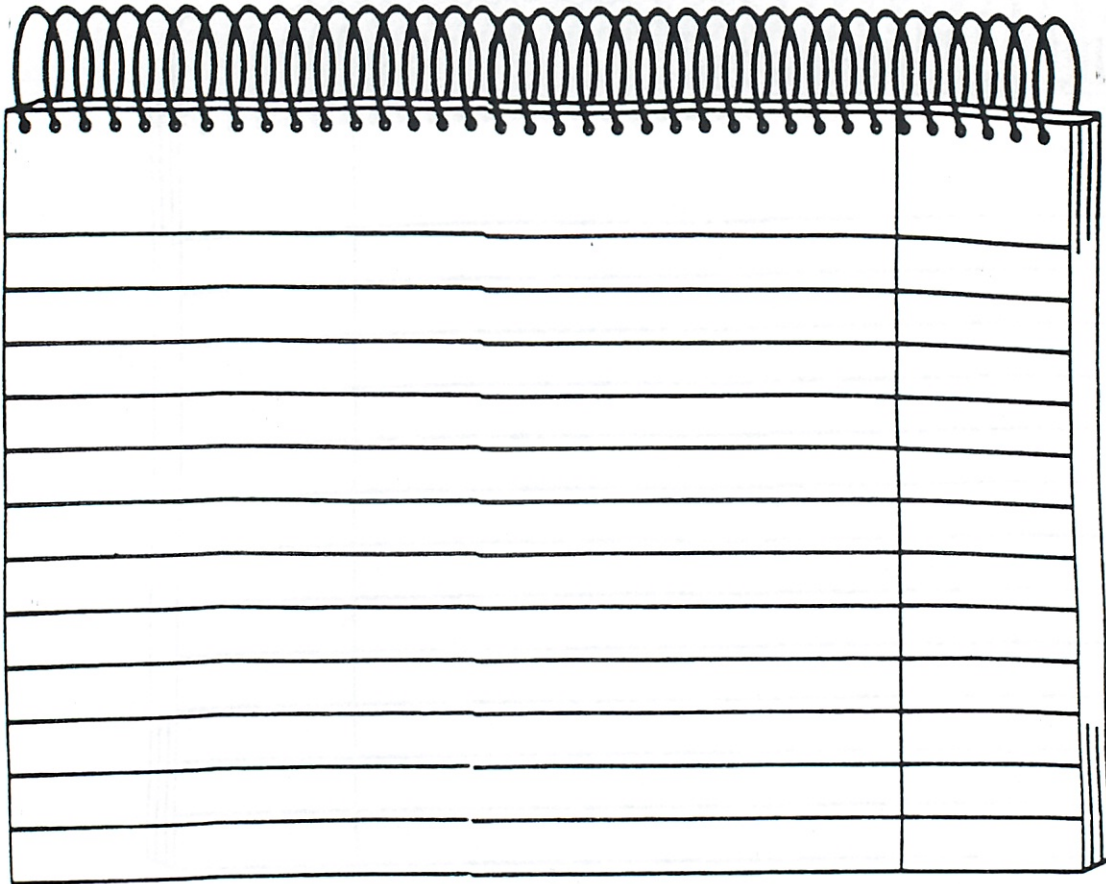
Notebook



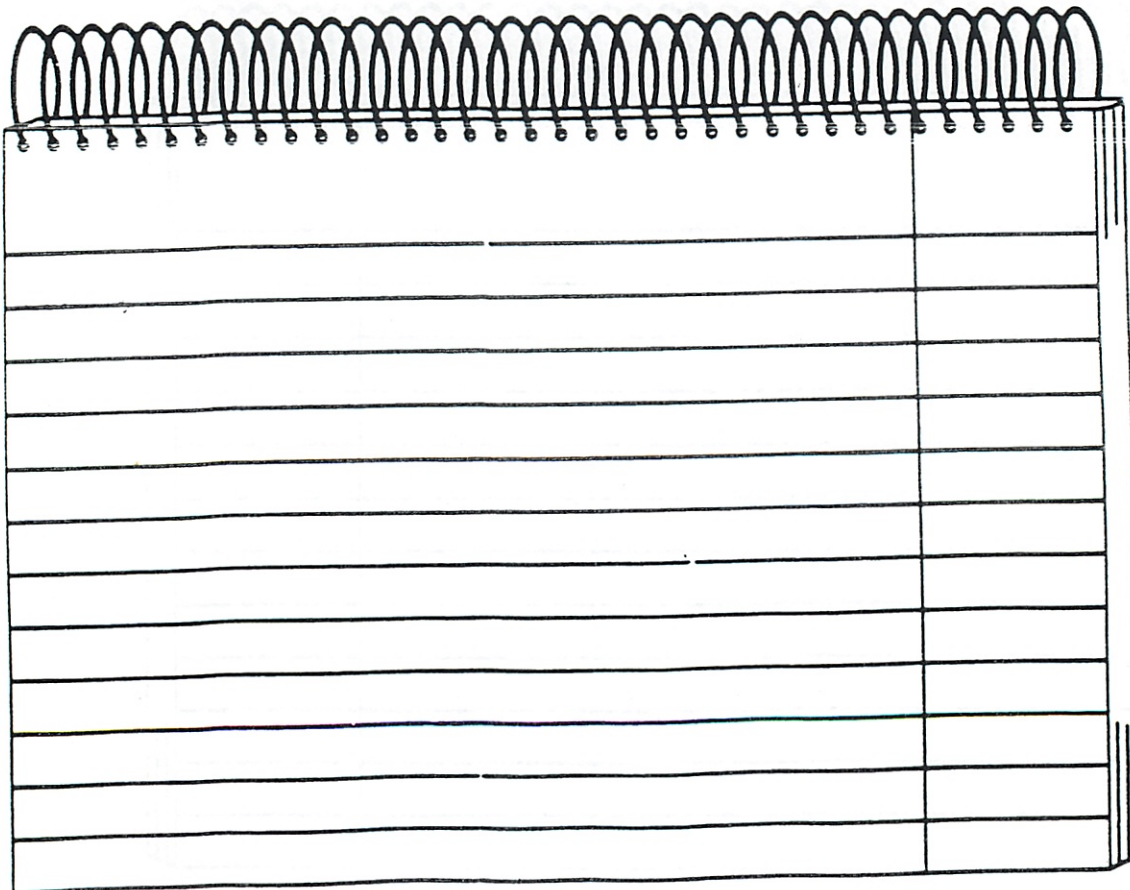
Notebook



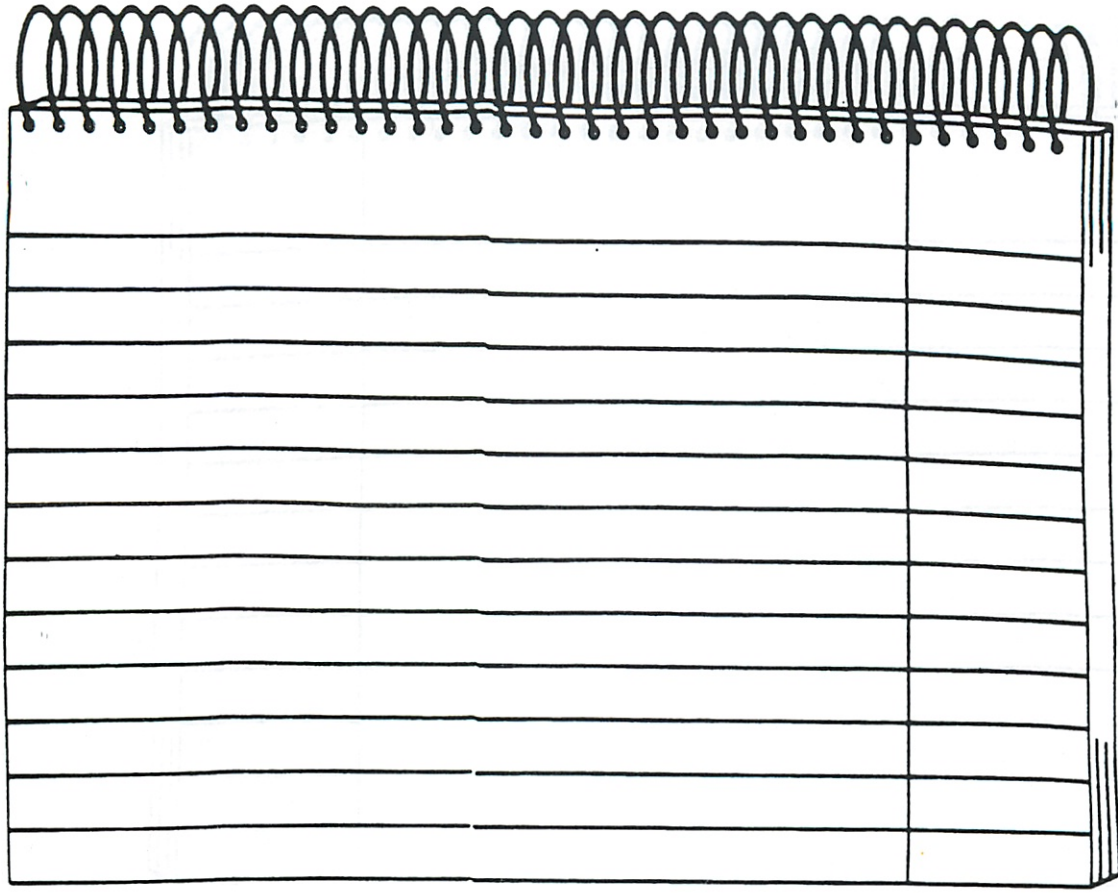
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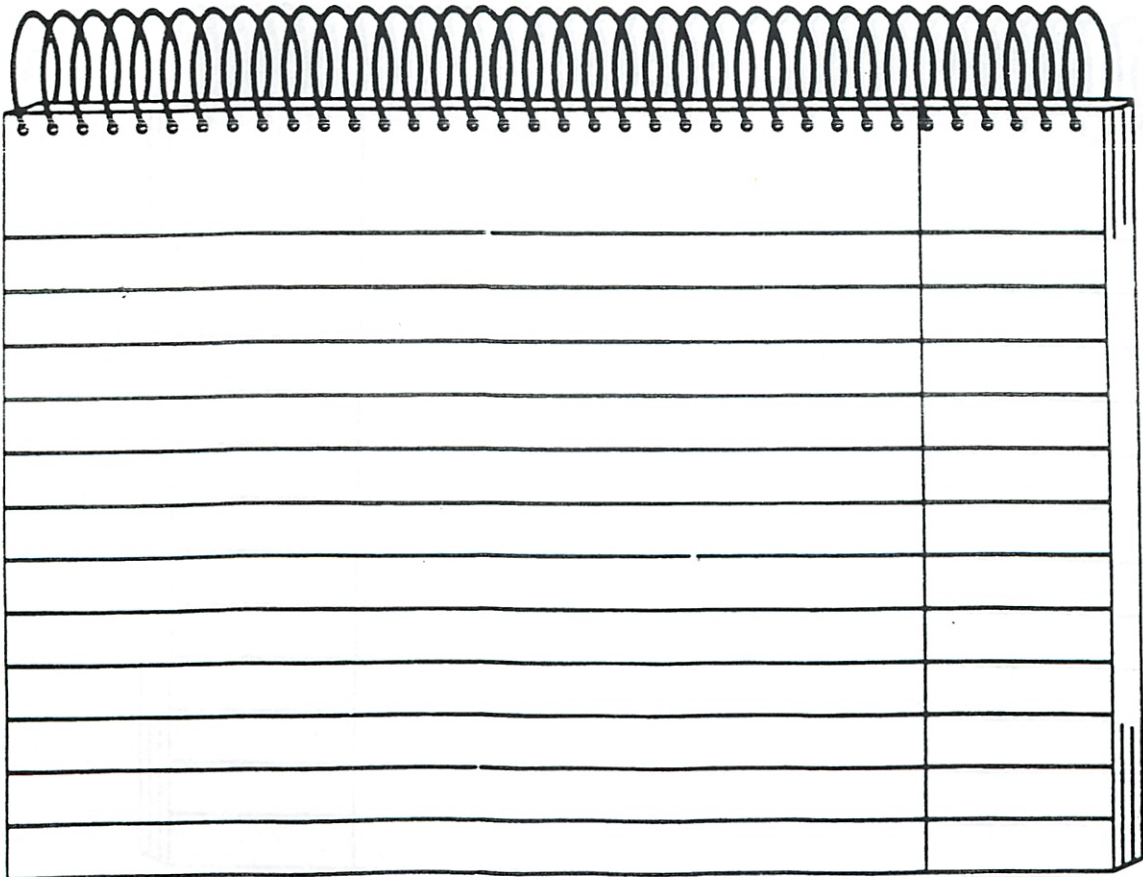
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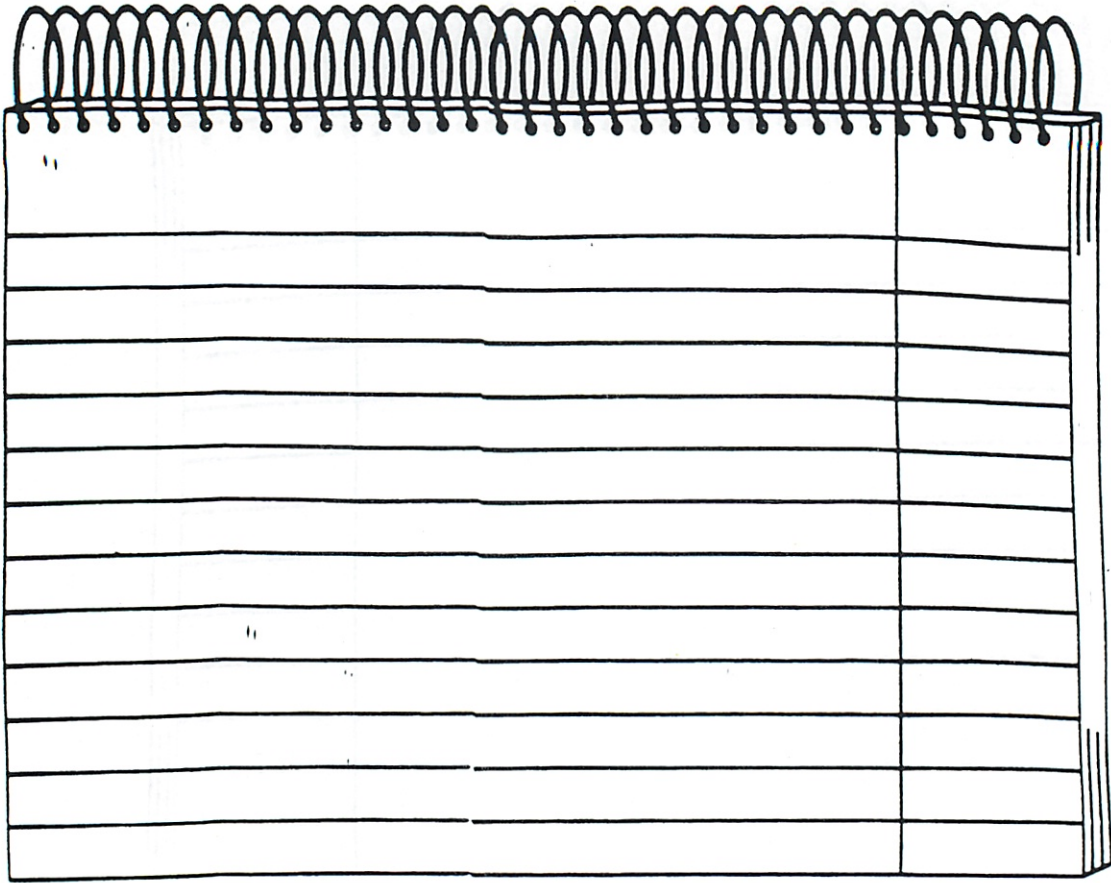
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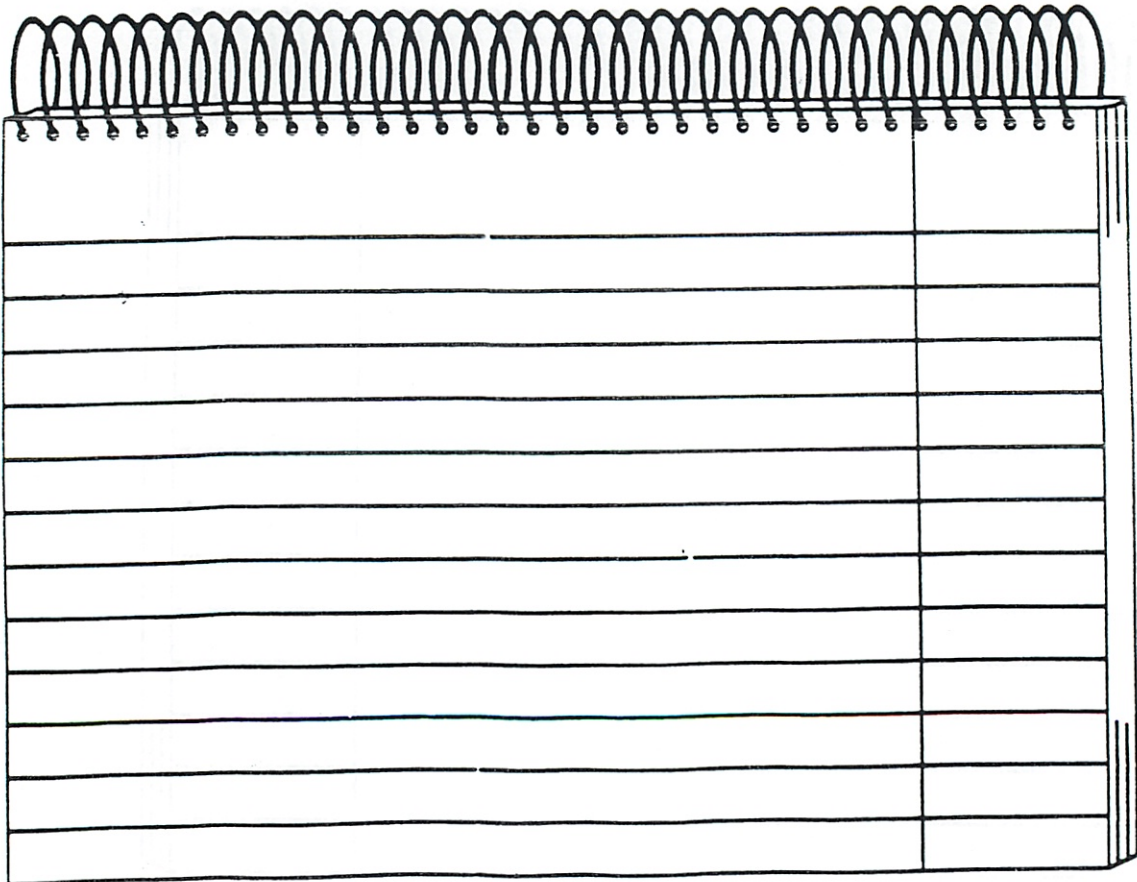
Notebook



Notebook



Notebook



Review --
Comparing Quantities

Name: _____

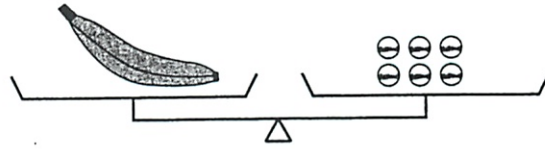
- 1) At a Flower shop, Tim paid \$8.50 for 2 roses and 3 carnations.
Ellen paid \$12 for 3 roses and 4 carnations.
Find the cost of one rose &
Find the cost of one carnation using the **combination chart** method.
- 2) At a Flower shop, Tim paid \$8.50 for 2 roses and 3 carnations.
Ellen paid \$12 for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

Pan-Balance Problems (cont.)

Solve these pan-balance problems. In each figure, the two pans are balanced.

Warm-Up Problems

1. One banana weighs as much as _____ marbles.



2. One cube weighs as much as _____ paper clips.

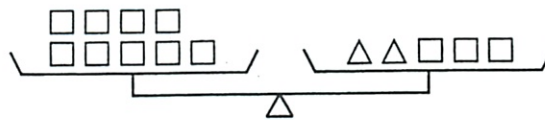


3. One cube weighs as much as _____ marbles.

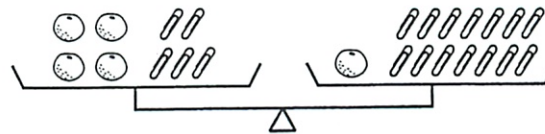


Slightly Sweaty Problems

4. One triangle weighs as much as _____ squares.

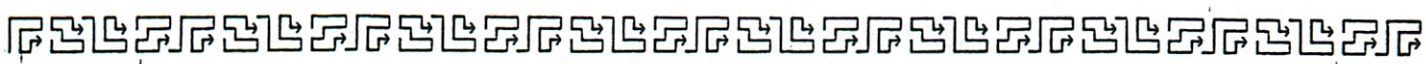


5. One orange weighs as much as _____ paper clips.



6. One and $\frac{1}{2}$ cantaloupes weigh as much as _____ apples.





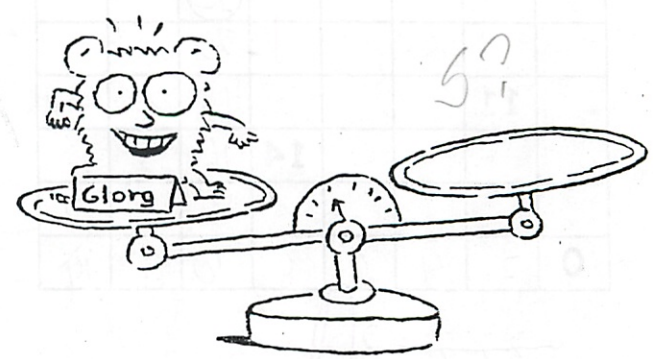
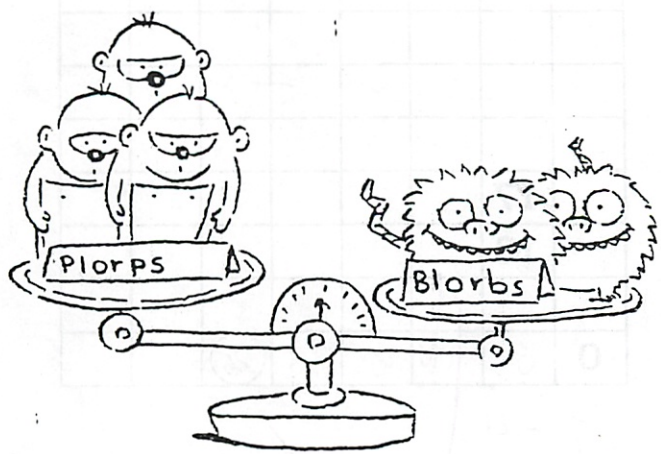
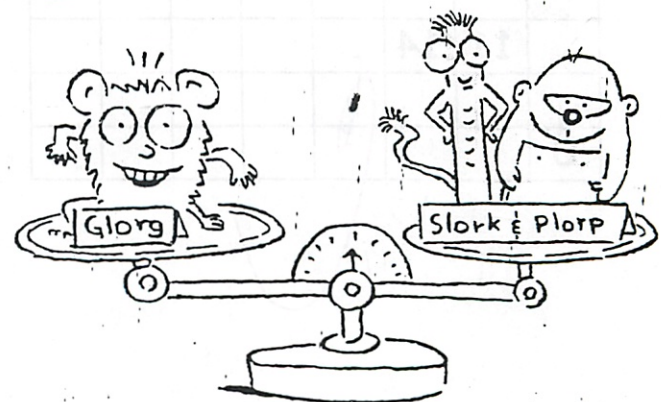
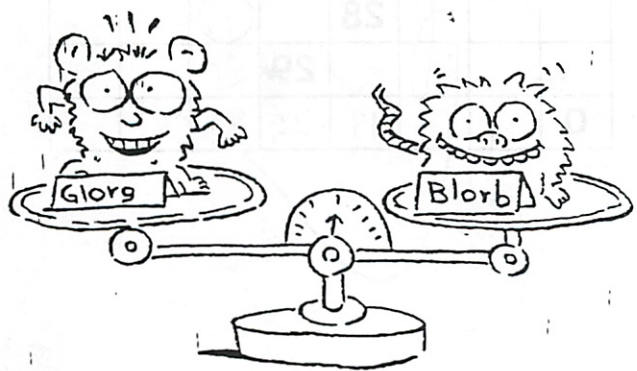
Beastie Balance

14/12 * AM

You never know what a beastie will weigh—until you weigh some beasties.

- ☐ The first scale shows that a Glog weighs the same as a Blorb.
- ☐ The second scale shows that a Glog weighs the same as a Slork and a Plorp together.
- ☐ The third scale shows that three Plorps weigh the same as two Blorbs.

Now it's your turn. How many Slorks will balance a Glog?



Start $1g = 1s + 1p$
 $\times 3$ $3g = 3s + 3p$
 $3g = 3s + 2b$
 D3 $3g = 3s + 2g$
 526 $1g = 3s$ *Wow!*

One glog equals 3 slorks.

+2

Michael Plasmeier

Find the number that goes in the circled box. Be sure to explain your strategy (in order, using arrows).

16							
12							
8	11	14					
4							
0							

→ +3
↓ -4

			28			40	
					29	35	
0	6	12	18	24	30		

↓ +1
→ +6
↑ +5

					25		
					22		
	11				19		
				14	16		
					13		17
0	2	4	6	8	10	12	14

↓ 2277 +3
→ +2
↑ +3

	17						
	13						
	9						
0	5	10	15	20	25		

↑ +4
→ +5

47/50 *

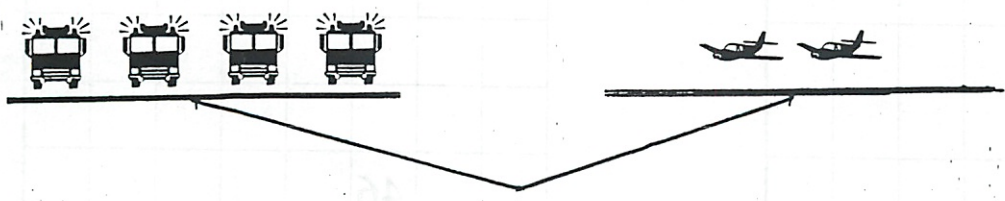
A. ✓

Quiz -- Comparing Quantities
Sections A,B,C

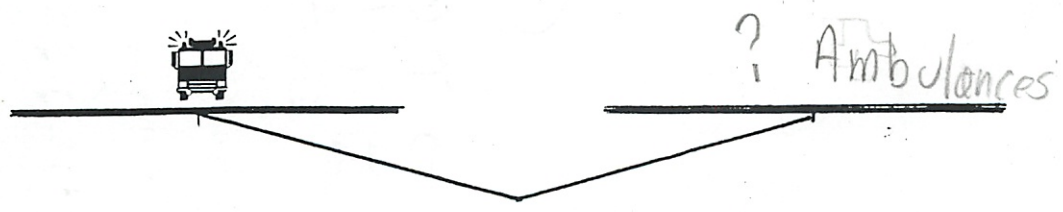
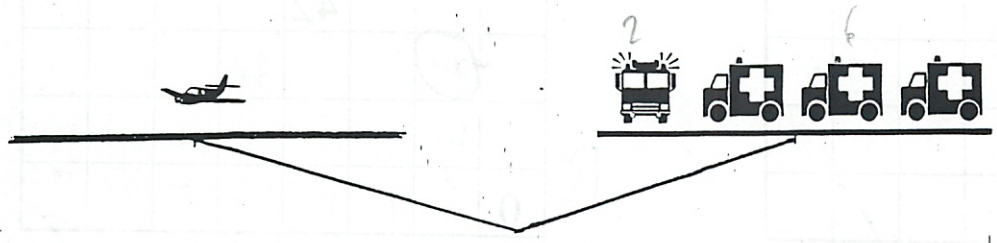
Name: Michael Pleasence
Period: 6



How many **ambulances** are needed to make the third scale balance? *Explain.*



$F = \# \text{ of fire engines}$
 $P = \# \text{ of planes}$
 $A = \# \text{ of Ambulances}$



Work:

$$4F = 2P$$

$$4F = 2F + 6A$$

$$2F = 6A$$

$$\underline{1F = 3A}$$

3 ambulances equal 1 fire engine.

2

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

			42				
			36				
	18		30				
	12		24				
0	6	12	18				

↗ +6
 ← -6
 ↑ +6

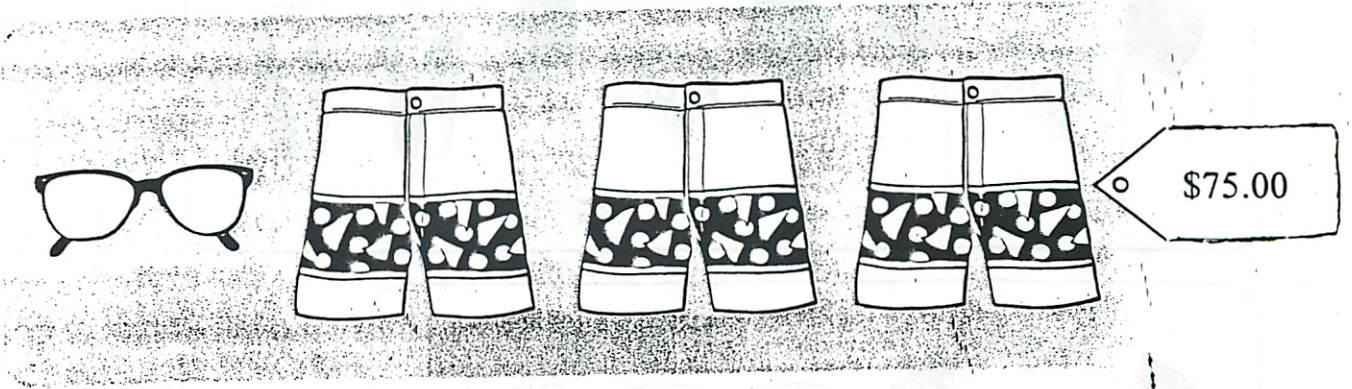
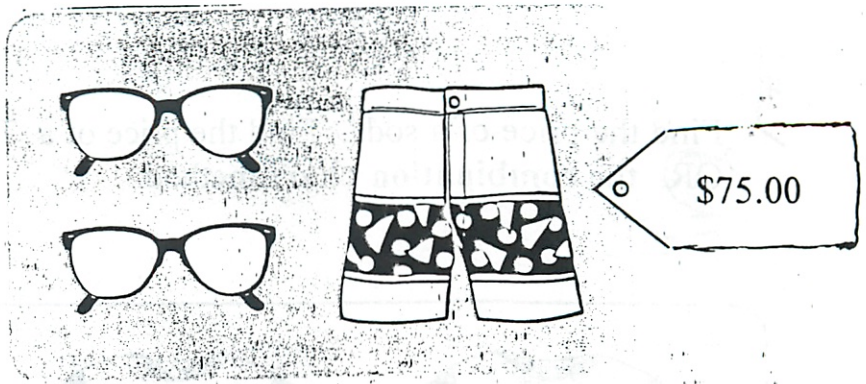
		46					
			42				
	23			38			
	14				34		
0	5	10	15	20	25	30	

↘ -4
 ← -5
 ↑ +9

Michael Plasmeier

3

Find the cost of a pair of glasses.
 Find the cost of a pair of shorts.
 Use the exchange method AND
 the combination chart method.



Exchange

s = price of shorts
 g = price of glasses

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

$$1g + 1s = 3s$$

$$1g = 2s$$

$$1g + 3s = \$75$$

$$2s + 3s = \$75$$

$$5s = \$75$$

$$1s = \$15$$

↓ Flip

↓

Combo. Chart

Prices in \$

# of Shorts	7								
	6								
	5	75							
	4	60							
	3	45	75						
	2	30							
	1	15	75						
	0	0	30	60					
		0	1	2	3	4	5	6	7

of glasses

↑ same (+0)

↓ - 15

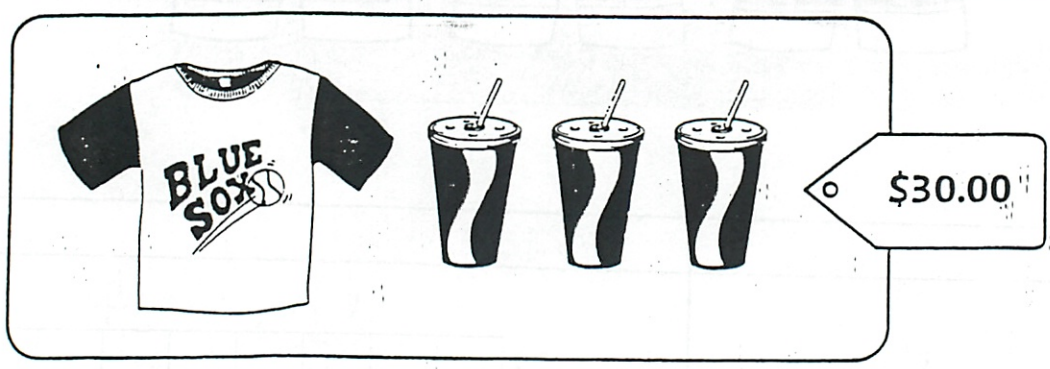
→ +30

Shorts = \$15

Glasses = \$30

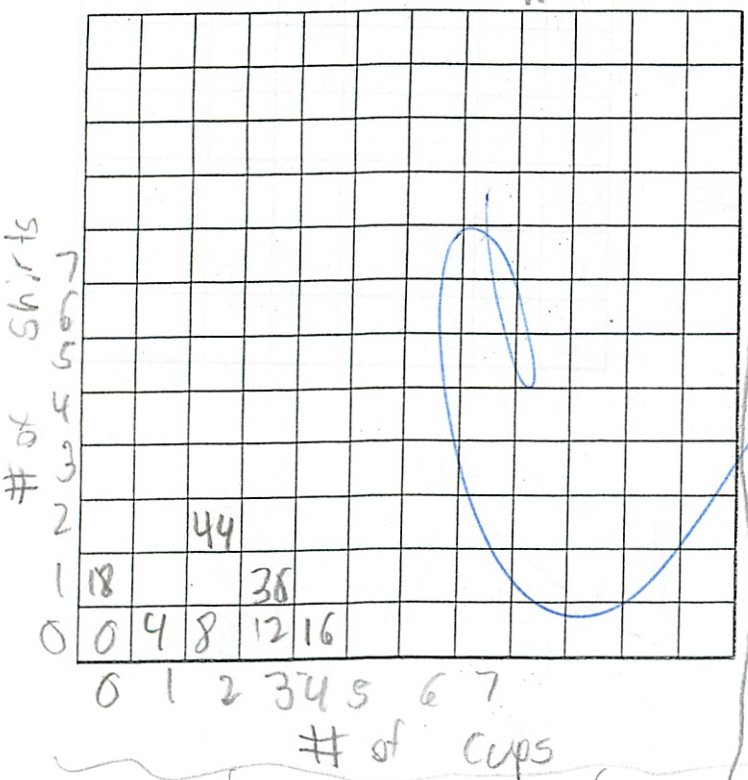
4

Find the price of a soda. Find the price of a T-shirt. Use the **exchange** method OR the **combination chart** method.



A shirt cost \$18, and a cup of soda cost \$4.

Prices in \$



From Back
 one pair of gloves equal \$30, and a pair of shorts equal \$15

2g + 1s = \$75
 2g + 2s = \$75
 2g + 3s = \$75
 2g + 4s = \$75
 2g + 5s = \$75

81 + 14 = 95
 4 - 7 = -3
 14 - 9 = 5

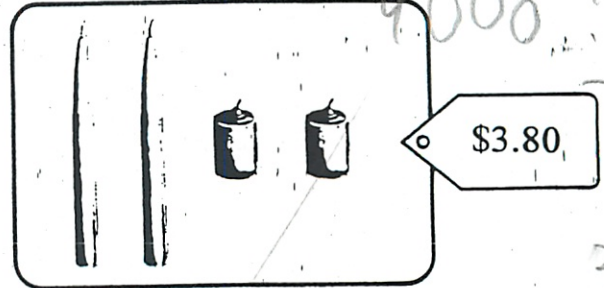
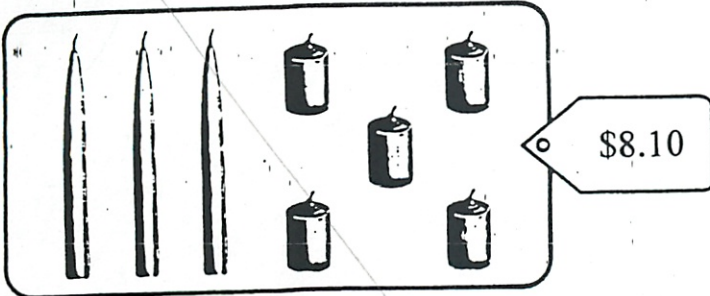
77 from Back

Michael Plasmeier

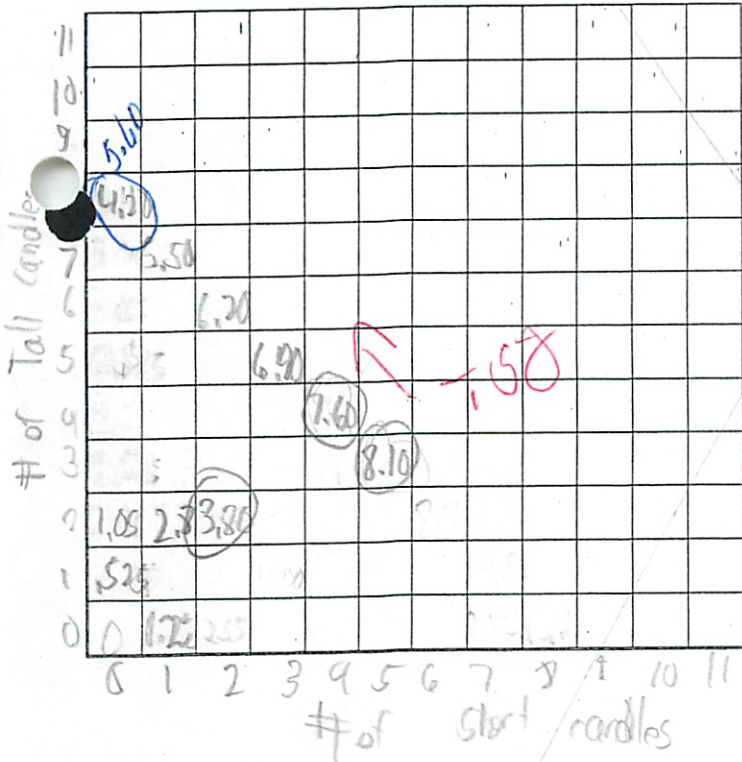
125
8720

5)

Find the price of a short candle. Find the price of a tall candle. Use the exchange method OR the combination chart method.



Prices in \$



Handwritten calculations and notes:

- 1.05 + 5.25 = 6.30
- 5.25 + 1.05 = 6.30
- 6.30 + 1.80 = 8.10
- 3.80 + 3.80 = 7.60
- 7.60 + 1.50 = 9.10
- 1.05 + 1.75 = 2.80
- 2.80 + 1.05 = 3.85
- 3.85 + 1.05 = 4.90
- 4.90 + 1.05 = 5.95
- 5.95 + 1.05 = 7.00
- 7.00 + 1.05 = 8.05
- 8.05 + 1.05 = 9.10
- 9.10 + 1.05 = 10.15
- 10.15 + 1.05 = 11.20
- 11.20 + 1.05 = 12.25
- 12.25 + 1.05 = 13.30
- 13.30 + 1.05 = 14.35
- 14.35 + 1.05 = 15.40
- 15.40 + 1.05 = 16.45
- 16.45 + 1.05 = 17.50
- 17.50 + 1.05 = 18.55
- 18.55 + 1.05 = 19.60
- 19.60 + 1.05 = 20.65
- 20.65 + 1.05 = 21.70
- 21.70 + 1.05 = 22.75
- 22.75 + 1.05 = 23.80
- 23.80 + 1.05 = 24.85
- 24.85 + 1.05 = 25.90
- 25.90 + 1.05 = 26.95
- 26.95 + 1.05 = 28.00
- 28.00 + 1.05 = 29.05
- 29.05 + 1.05 = 30.10
- 30.10 + 1.05 = 31.15
- 31.15 + 1.05 = 32.20
- 32.20 + 1.05 = 33.25
- 33.25 + 1.05 = 34.30
- 34.30 + 1.05 = 35.35
- 35.35 + 1.05 = 36.40
- 36.40 + 1.05 = 37.45
- 37.45 + 1.05 = 38.50
- 38.50 + 1.05 = 39.55
- 39.55 + 1.05 = 40.60
- 40.60 + 1.05 = 41.65
- 41.65 + 1.05 = 42.70
- 42.70 + 1.05 = 43.75
- 43.75 + 1.05 = 44.80
- 44.80 + 1.05 = 45.85
- 45.85 + 1.05 = 46.90
- 46.90 + 1.05 = 47.95
- 47.95 + 1.05 = 49.00
- 49.00 + 1.05 = 50.05
- 50.05 + 1.05 = 51.10
- 51.10 + 1.05 = 52.15
- 52.15 + 1.05 = 53.20
- 53.20 + 1.05 = 54.25
- 54.25 + 1.05 = 55.30
- 55.30 + 1.05 = 56.35
- 56.35 + 1.05 = 57.40
- 57.40 + 1.05 = 58.45
- 58.45 + 1.05 = 59.50
- 59.50 + 1.05 = 60.55
- 60.55 + 1.05 = 61.60
- 61.60 + 1.05 = 62.65
- 62.65 + 1.05 = 63.70
- 63.70 + 1.05 = 64.75
- 64.75 + 1.05 = 65.80
- 65.80 + 1.05 = 66.85
- 66.85 + 1.05 = 67.90
- 67.90 + 1.05 = 68.95
- 68.95 + 1.05 = 70.00
- 70.00 + 1.05 = 71.05
- 71.05 + 1.05 = 72.10
- 72.10 + 1.05 = 73.15
- 73.15 + 1.05 = 74.20
- 74.20 + 1.05 = 75.25
- 75.25 + 1.05 = 76.30
- 76.30 + 1.05 = 77.35
- 77.35 + 1.05 = 78.40
- 78.40 + 1.05 = 79.45
- 79.45 + 1.05 = 80.50
- 80.50 + 1.05 = 81.55
- 81.55 + 1.05 = 82.60
- 82.60 + 1.05 = 83.65
- 83.65 + 1.05 = 84.70
- 84.70 + 1.05 = 85.75
- 85.75 + 1.05 = 86.80
- 86.80 + 1.05 = 87.85
- 87.85 + 1.05 = 88.90
- 88.90 + 1.05 = 89.95
- 89.95 + 1.05 = 91.00
- 91.00 + 1.05 = 92.05
- 92.05 + 1.05 = 93.10
- 93.10 + 1.05 = 94.15
- 94.15 + 1.05 = 95.20
- 95.20 + 1.05 = 96.25
- 96.25 + 1.05 = 97.30
- 97.30 + 1.05 = 98.35
- 98.35 + 1.05 = 99.40
- 99.40 + 1.05 = 100.45
- 100.45 + 1.05 = 101.50
- 101.50 + 1.05 = 102.55
- 102.55 + 1.05 = 103.60
- 103.60 + 1.05 = 104.65
- 104.65 + 1.05 = 105.70
- 105.70 + 1.05 = 106.75
- 106.75 + 1.05 = 107.80
- 107.80 + 1.05 = 108.85
- 108.85 + 1.05 = 109.90
- 109.90 + 1.05 = 110.95
- 110.95 + 1.05 = 112.00
- 112.00 + 1.05 = 113.05
- 113.05 + 1.05 = 114.10
- 114.10 + 1.05 = 115.15
- 115.15 + 1.05 = 116.20
- 116.20 + 1.05 = 117.25
- 117.25 + 1.05 = 118.30
- 118.30 + 1.05 = 119.35
- 119.35 + 1.05 = 120.40
- 120.40 + 1.05 = 121.45
- 121.45 + 1.05 = 122.50
- 122.50 + 1.05 = 123.55
- 123.55 + 1.05 = 124.60
- 124.60 + 1.05 = 125.65
- 125.65 + 1.05 = 126.70
- 126.70 + 1.05 = 127.75
- 127.75 + 1.05 = 128.80
- 128.80 + 1.05 = 129.85
- 129.85 + 1.05 = 130.90
- 130.90 + 1.05 = 131.95
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- 133.00 + 1.05 = 134.05
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- 136.15 + 1.05 = 137.20
- 137.20 + 1.05 = 138.25
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- 139.30 + 1.05 = 140.35
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- 143.50 + 1.05 = 144.55
- 144.55 + 1.05 = 145.60
- 145.60 + 1.05 = 146.65
- 146.65 + 1.05 = 147.70
- 147.70 + 1.05 = 148.75
- 148.75 + 1.05 = 149.80
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- 161.35 + 1.05 = 162.40
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- 165.55 + 1.05 = 166.60
- 166.60 + 1.05 = 167.65
- 167.65 + 1.05 = 168.70
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- 170.80 + 1.05 = 171.85
- 171.85 + 1.05 = 172.90
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- 188.65 + 1.05 = 189.70
- 189.70 + 1.05 = 190.75
- 190.75 + 1.05 = 191.80
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- 192.85 + 1.05 = 193.90
- 193.90 + 1.05 = 194.95
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- 230.65 + 1.05 = 231.70
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- 232.75 + 1.05 = 233.80
- 233.80 + 1.05 = 234.85
- 234.85 + 1.05 = 235.90
- 235.90 + 1.05 = 236.95
- 236.95 + 1.05 = 238.00
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- 289.45 + 1.05 = 290.50
- 290.50 + 1.05 = 291.55
- 291.55 + 1.05 = 292.60
- 292.60 + 1.05 = 293.65
- 293.65 + 1.05 = 294.70
- 294.70 + 1.05 = 295.75
- 295.75 + 1.05 = 296.80
- 296.80 + 1.05 = 297.85
- 297.85 + 1.05 = 298.90
- 298.90 + 1.05 = 299.95
- 299.95 + 1.05 = 301.00
- 301.00 + 1.05 = 302.05
- 302.05 + 1.05 = 303.10
- 303.10 + 1.05 = 304.15
- 304.15 + 1.05 = 305.20
- 305.20 + 1.05 = 306.25
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- 310.45 + 1.05 = 311.50
- 311.50 + 1.05 = 312.55
- 312.55 + 1.05 = 313.60
- 313.60 + 1.05 = 314.65
- 314.65 + 1.05 = 315.70
- 315.70 + 1.05 = 316.75
- 316.75 + 1.05 = 317.80
- 317.80 + 1.05 = 318.85
- 318.85 + 1.05 = 319.90
- 319.90 + 1.05 = 320.95
- 320.95 + 1.05 = 322.00
- 322.00 + 1.05 = 323.05
- 323.05 + 1.05 = 324.10
- 324.10 + 1.05 = 325.15
- 325.15 + 1.05 = 326.20
- 326.20 + 1.05 = 327.25
- 327.25 + 1.05 = 328.30
- 328.30 + 1.05 = 329.35
- 329.35 + 1.05 = 330.40
- 330.40 + 1.05 = 331.45
- 331.45 + 1.05 = 332.50
- 332.50 + 1.05 = 333.55
- 333.55 + 1.05 = 334.60
- 334.60 + 1.05 = 335.65
- 335.65 + 1.05 = 336.70
- 336.70 + 1.05 = 337.75
- 337.75 + 1.05 = 338.80
- 338.80 + 1.05 = 339.85
- 339.85 + 1.05 = 340.90
- 340.90 + 1.05 = 341.95
- 341.95 + 1.05 = 343.00
- 343.00 + 1.05 = 344.05
- 344.05 + 1.05 = 345.10
- 345.10 + 1.05 = 346.15
- 346.15 + 1.05 = 347.20
- 347.20 + 1.05 = 348.25
- 348.25 + 1.05 = 349.30
- 349.30 + 1.05 = 350.35
- 350.35 + 1.05 = 351.40
- 351.40 + 1.05 = 352.45
- 352.45 + 1.05 = 353.50
- 353.50 + 1.05 = 354.55
- 354.55 + 1.05 = 355.60
- 355.60 + 1.05 = 356.65
- 356.65 + 1.05 = 357.70
- 357.70 + 1.05 = 358.75
- 358.75 + 1.05 = 359.80
- 359.80 + 1.05 = 360.85
- 360.85 + 1.05 = 361.90
- 361.90 + 1.05 = 362.95
- 362.95 + 1.05 = 364.00
- 364.00 + 1.05 = 365.05
- 365.05 + 1.05 = 366.10
- 366.10 + 1.05 = 367.15
- 367.15 + 1.05 = 368.20
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- 372.40 + 1.05 = 373.45
- 373.45 + 1.05 = 374.50
- 374.50 + 1.05 = 375.55
- 375.55 + 1.05 = 376.60
- 376.60 + 1.05 = 377.65
- 377.65 + 1.05 = 378.70
- 378.70 + 1.05 = 379.75
- 379.75 + 1.05 = 380.80
- 380.80 + 1.05 = 381.85
- 381.85 + 1.05 = 382.90
- 382.90 + 1.05 = 383.95
- 383.95 + 1.05 = 385.00
- 385.00 + 1.05 = 386.05
- 386.05 + 1.05 = 387.10
- 387.10 + 1.05 = 388.15
- 388.15 + 1.05 = 389.20
- 389.20 + 1.05 = 390.25
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- 391.30 + 1.05 = 392.35
- 392.35 + 1.05 = 393.40
- 393.40 + 1.05 = 394.45
- 394.45 + 1.05 = 395.50
- 395.50 + 1.05 = 396.55
- 396.55 + 1.05 = 397.60
- 397.60 + 1.05 = 398.65
- 398.65 + 1.05 = 399.70
- 399.70 + 1.05 = 400.75
- 400.75 + 1.05 = 401.80
- 401.80 + 1.05 = 402.85
- 402.85 + 1.05 = 403.90
- 403.90 + 1.05 = 404.95
- 404.95 + 1.05 = 406.00
- 406.00 + 1.05 = 407.05
- 407.05 + 1.05 = 408.10
- 408.10 + 1.05 = 409.15
- 409.15 + 1.05 = 410.20
- 410.20 + 1.05 = 411.25
- 411.25 + 1.05 = 412.30
- 412.30 + 1.05 = 413.35
- 413.35 + 1.05 = 414.40
- 414.40 + 1.05 = 415.45
- 415.45 + 1.05 = 416.50
- 416.50 + 1.05 = 417.55
- 417.55 + 1.05 = 418.60
- 418.60 + 1.05 = 419.65
- 419.65 + 1.05 = 420.70
- 420.70 + 1.05 = 421.75
- 421.75 + 1.05 = 422.80
- 422.80 + 1.05 = 423.85
- 423.85 + 1.05 = 424.90
- 424.90 + 1.05 = 425.95
- 425.95 + 1.05 = 427.00
- 427.00 + 1.05 = 428.05
- 428.05 + 1.05 = 429.10
- 429.10 + 1.05 = 430.15
- 430.15 + 1.05 = 431.20
- 431.20 + 1.05 = 432.25
- 432.25 + 1.05 = 433.30
- 433.30 + 1.05 = 434.35
- 434.35 + 1.05 = 435.40
- 435.40 + 1.05 = 436.45
- 436.45 + 1.05 = 437.50
- 437.50 + 1.05 = 438.55
- 438.55 + 1.05 = 439.60
- 439.60 + 1.05 = 440.65
- 440.65 + 1.05 = 441.70
- 441.70 + 1.05 = 442.75
- 442.75 + 1.05 = 443.80

Test --
Comparing Quantities

Name: Michael Plesmeier

57/60 [95*] Wow!

#s 1, 2 and 3, find the costs using the **indicated** method.

- 1) At a Flower shop, Barbara paid \$10.50 for 6 irises and 4 daisies.
Farmer Frank paid \$7.50 for 3 irises and 5 daisies.
Find the cost of one iris &
Find the cost of one daisy using the **combination chart** method.
- 2) At a Flower shop, Barbara paid \$10.50 for 6 irises and 4 daisies.
Farmer Frank paid \$7.50 for 3 irises and 5 daisies.
-- Write equations representing this information.
-- Write an equation that shows the price of fifteen irises and one daisy.
-- Find the cost of one iris &
Find the cost of one daisy using the **equation** method.
- 3) Chloe is a waitress at Brian's Diner. She is new to the job and has found her first day hectic ! She needs HELP !!!!!!!
Below are her first three orders:
- | | | | |
|---------|----------|----------|---------|
| 1 Taco | 0 Salads | 2 Drinks | \$4 |
| 3 Tacos | 1 Salad | 6 Drinks | \$14.50 |
| 0 Tacos | 5 Salads | 5 Drinks | \$18.75 |
- Can you help her find the price of one taco? one salad? one drink?
using the **notebook notation** method?

Over ----

Michael Plasmeier

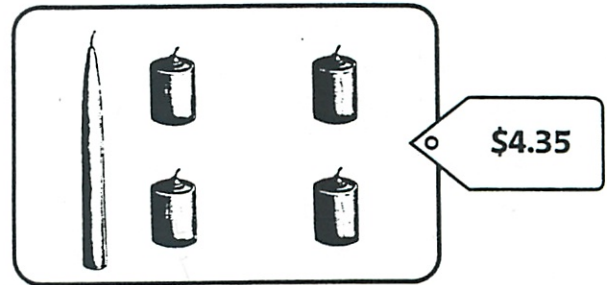
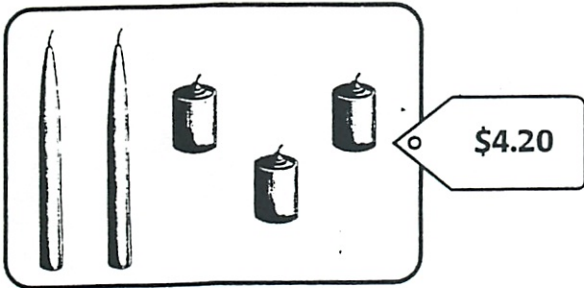
#s 4 and 5, find the prices using the **method of your choice**.

4) Jared bought 3 T-shirts and 4 caps for \$96. Claire bought 2 T-shirts and 5 caps for \$99.

Find the price of one T-shirt? one cap?

5) Jenna and Ben bought the following candles.

Find the price of one short candle? one tall candle?



Extra Credit: Find the prices using the **equation method**.

At a movie theater, tickets for three adults, two seniors and two children cost \$35. Tickets for one senior and two children cost \$12.50. Tickets for one adult, one senior and two children cost \$18.50.

What is the price for one adult? one senior? one child?

Michael Blossmer
prices in Dollars

Key
I = price of 1 Iris in dollars
D = price of 1 Daisy in dollars

9										
8										
7										
6				10.50						
5										
4										
3					7.50					
2					6.25					
1	1.25				5					
0	0	0.75	1.50	2.25	3	3.75	4.50			
	0	1	2	3	4	5	6	7	8	9

of Irises

of Daisies

Answer:

↓ -3
↓

← -0.75

↑ +1.25

Answer: one iris costs \$1.25, and one daisy cost \$0.75.

#2

Start: $6I + 4D = 10.50$
 $3I + 5D = 7.50$

Key:

I = price of 1 Iris in dollars

D = price of 1 Daisy in dollars

$15I + 10D = 19.50$

$12I + 20D = 16.50$

$9I + 30D = 13.50$

$6I + 4D = 10.50$

$3I + 5D = 7.50$

$\rightarrow \times 1 \rightarrow 6I + 4D = 10.50$
 $\rightarrow \times 2 \rightarrow 6I + 10D = 15$

$\div 6 \rightarrow 6D = 4.50$
 $D = 0.75$

$6I + 4D = 10.50$

$6I + 3 = 10.50$

$6I = 7.50$

$I = 1.25$

Answer:

15 irises and 1 daisy is \$19.50, 1 iris is \$1.25 and a daisy is \$0.75.

#3

Line	Taco	Salad	Drink	Total	Move
1	1	0	2	4	
2	3	1	6	14.50	
3	0	5	5	18.50	18.75
<hr/>					
4	2	1	4	10.50	L2-L1
5	2	6	4	29.50	L4+L3
6	1	6	7	25	L5-L2
7	0	6	5	21	L6-L1
8	0	1	0	2.50	L7-L3
9	0	5	0	12.50	L8x5
10	0	0	5	6	L3-L4
11	0	0	1	1.20	L10-8
12	0	0	2	2.40	L11x2
13	1	0	0	1.60	L1-L12

Salad =
\$ 2.50

Drink =
\$ 1.20

Taco =
\$ 1.60

One taco is \$ 1.60,
one salad is \$ 2.50,
and one drink is \$ 1.20

3

14.50		2.50
7.20		-5
4.80		2.50
2.50		
1.20	854	18.50
2.40	25	12.60
6	42	
7.20	90	
	5	
	490	0.833
	175	150820
	x5	
	625	

#5

Prices in \$

of tall candles

9									
8									
7									
6									
5									
4									
3									
2				4.20					
1	0.75				4.35				
0	0	.90	1.80	2.70	3.60	4.50			
	0	1	2	3	4	5	6	7	8

of short candles

T = price of one tall candle in \$
 S = price of one short candle in \$

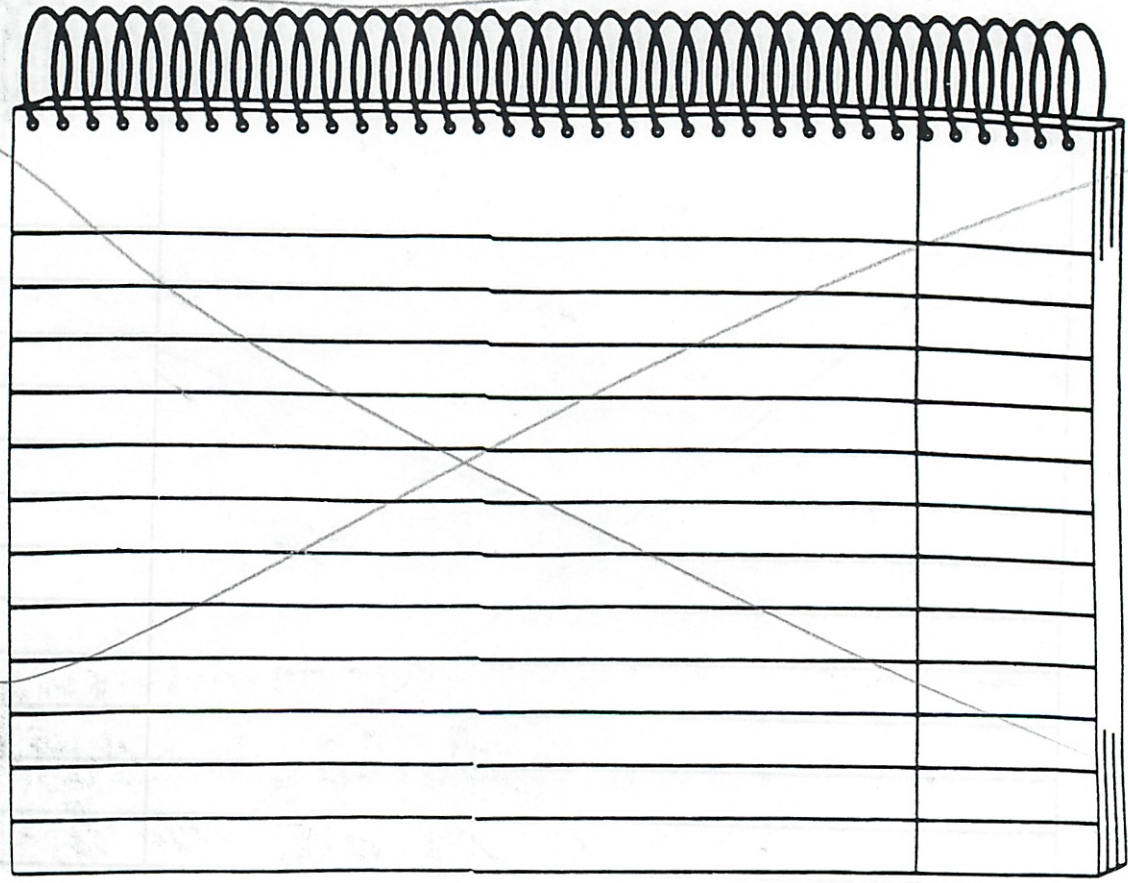
$2T + 3S = 4.20$
 $1T + 4S = 4.35$

$y + 0.15$
 $e - 0.90$
 $T + 0.75$

One short candle costs 90¢ and one tall candle costs 75¢.

5 | 450
 1135

 75



Michael & Larmer
EXTRA CREDIT

$3A + 2S + 2C = 35$
 $1S + 2C = 12.50$
 $1A + 1S + 2C = 18.50$

A = price of one adult in \$
 S = price of one seniors in \$
 C = price of one child in \$

$1S = 6.50$
 $1A = 5.50$
 $1C = 3$

$3A + 2S + 2C = 35$
 sub \downarrow
 $1A + 1S + 2C = 18.50$ Add
 $2A + 1S = 17.50$
 Add \downarrow
 $1S + 2C = 12.50$
 $2A + 2S + 2C = 30$
 sub \downarrow
 $4A + 3S + 4C = 53.50$ sub
 $2A + 1S + 2C = 23.50$ sub

$2A + 1S = 17.50$
 $2A + 6.50 = 17.50$
 $2A = 11$
 $1A = 5.50$
 $1S + 2C = 12.50$
 $6.50 + 2C = 12.50$
 $2C = 6$
 $1C = 3$

$1S = 6.50$

$1A + 1S + 2C = 18.50$
 $1A + 6.50 + 2C = 18.50$
 $1A + 2C = 12$



one senior is \$6.50, 1 adult is \$5.50, and a child is \$3.

Michael Plasmeier
#4 Equation Method OR EXCHANGE METHOD

#5 Equation Method OR EXCHANGE METHOD

Math

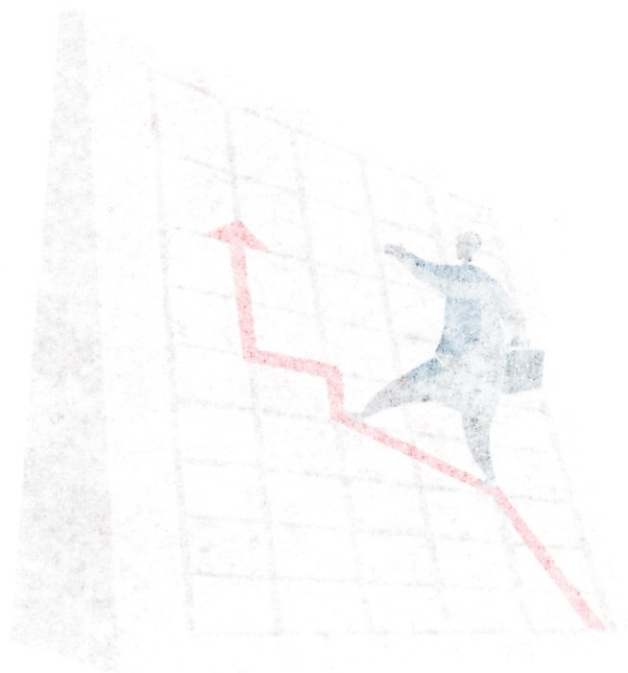
Graphing Equations



Math

Graphing

Equations



Michael Plummer

Graphing Equations -- Part I

Classwork

Homework

A. Where There's Smoke (Pages 1 - 6)

Topic: Directions using words, symbols, degrees
#s 1-8 # 9

B. Coordinates on a Screen (Pages 7 - 14)

Topic: Coordinate Plane & Boundaries
#s 1 - 7

#s 8 - 10 & Vocab #s 1-8
GE-1 -- due: _____
#s 17 - 19 & GE - 2

#s 11 - 16

C. Directions as Pairs of Numbers (Pages 15 - 22)

Topic: Slope
#s 1 - 7
#s 13 - 18
Review slope

#s 8 - 12
#s 19 -21 & Vocab # 10
GE - 3

Review Sections B & C

GE - 4

Quiz -- Sections B & C -- in class

D. An Equation of a Line (Pages 23 - 30)

Topic: Y-intercept & slope-intercept equation

#s 1 - 8
#s 9 - 16
#s 24,25

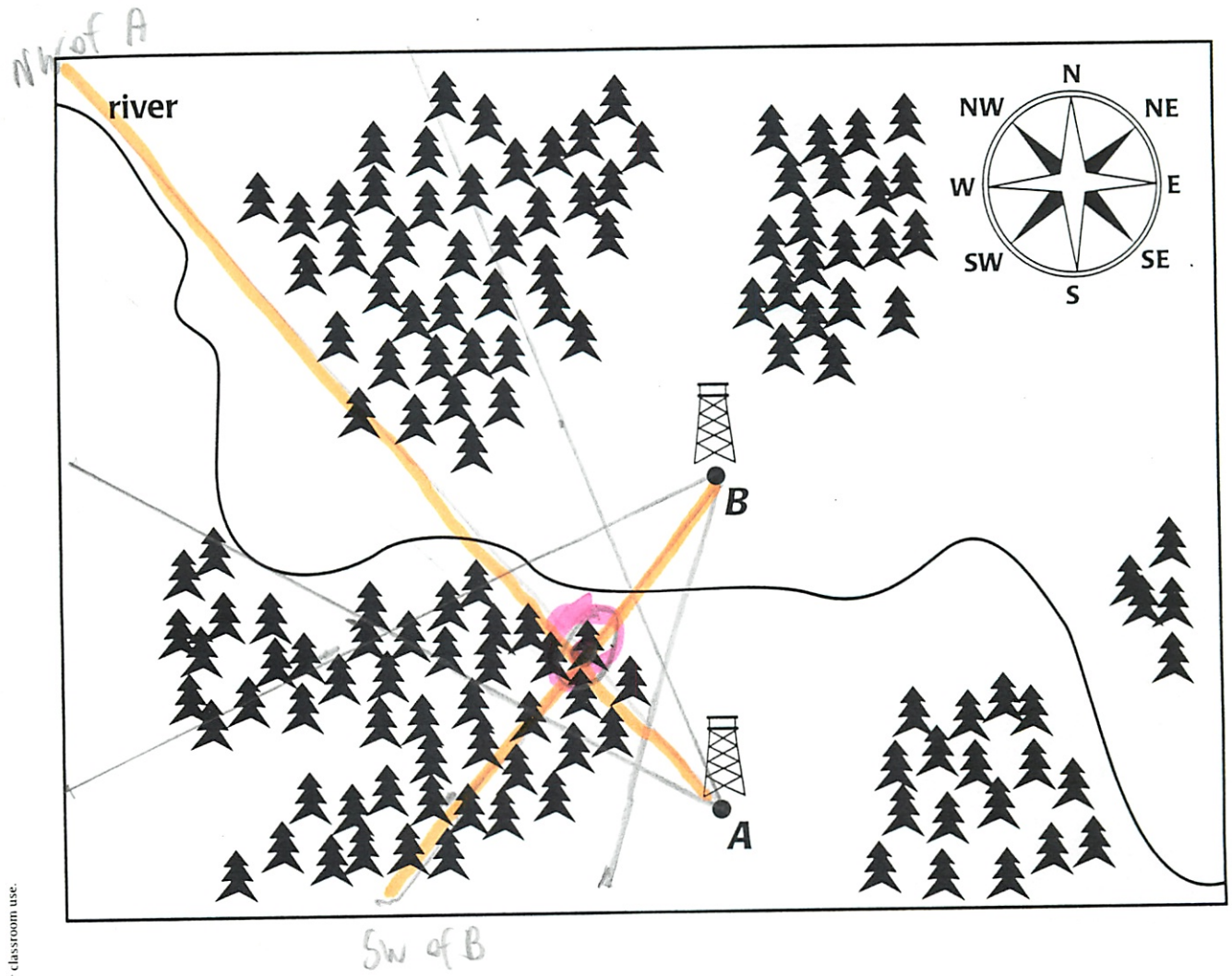
GE - 5 & Vocab #s 11,12
#17
GE - 6

*** THIS IS A TENTATIVE SCHEDULE ***

Student Activity Sheet 1

Use with *Graphing Equations*, page 2.

Name _____



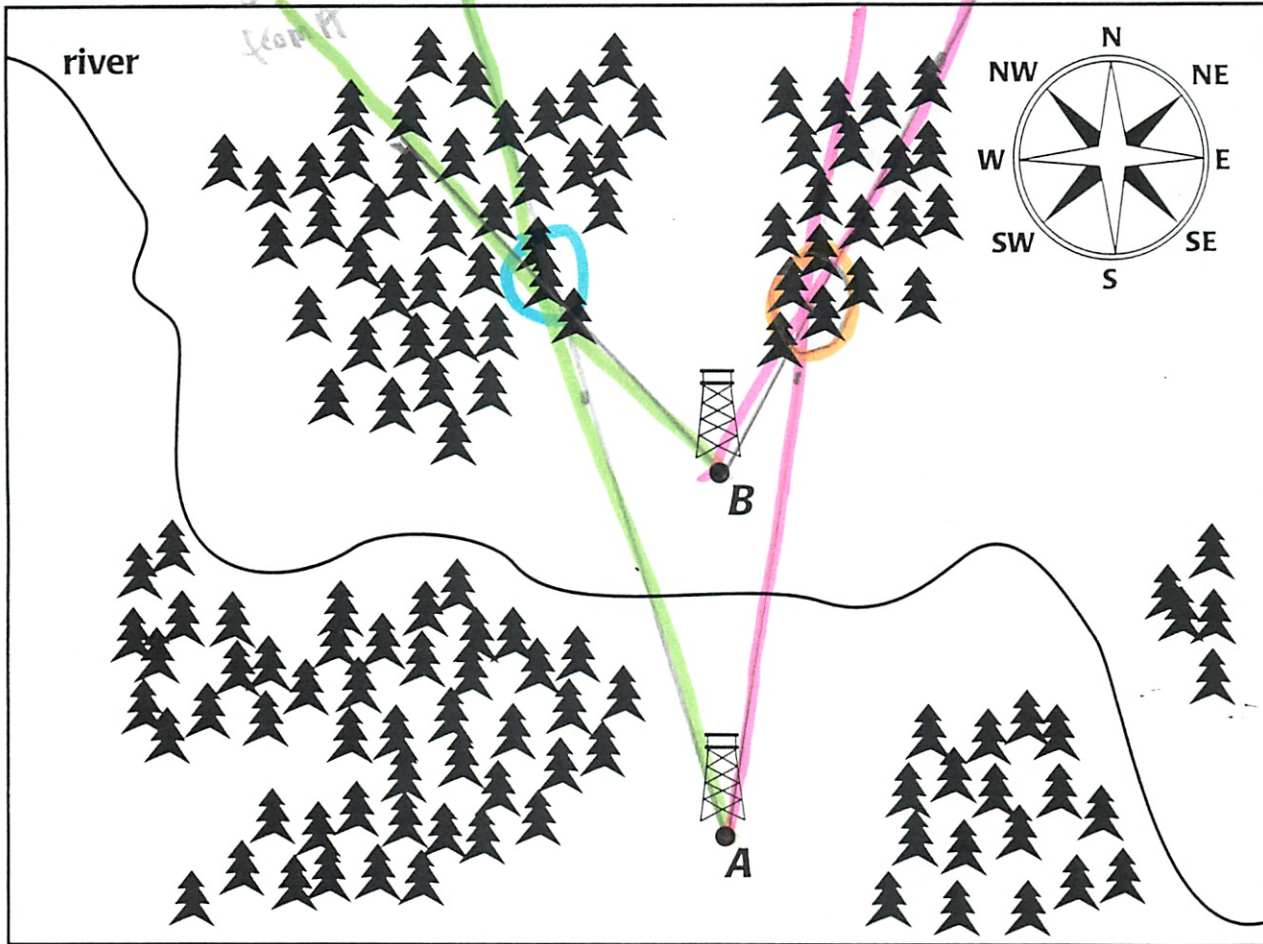
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Student Activity Sheet 2

Name _____

Use with *Graphing Equations*, page 4.

5. Smoke is reported at 8° from tower A, and the same smoke is reported at 26° from tower B. Use this sheet to show the exact location of the fire.
6. Use this sheet to show the exact location of a fire if rangers report smoke at 342° from tower A and 315° from tower B.



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Student Activity Sheet 3

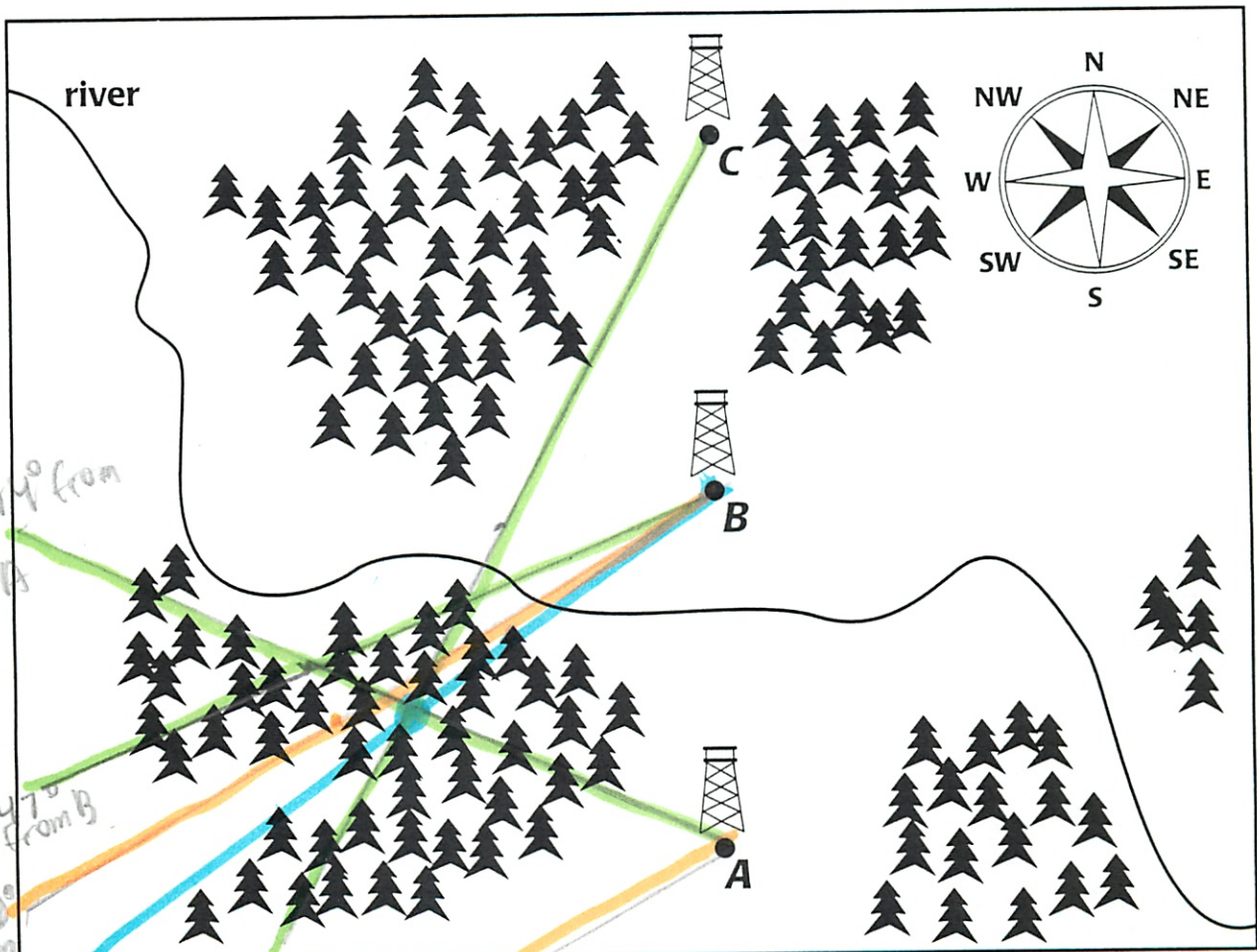
Name _____

Use with *Graphing Equations*, page 5.

7. The firefighters receive reports of smoke that is 294° from tower A, 247° from tower B, and 210° from tower C.
 - a. The firefighters know that something is wrong with these reports. Explain how they know.
 - b. Further reports confirm that the observations from towers A and C are correct but the observation from tower B is incorrect. Find the correct observation to report from tower B.

8. On another day, rangers report smoke at a direction of 240° from tower A and from tower B. Is it possible that both reports are correct? Why or why not?

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Graphing Equations – Vocabulary

1) **Coordinate System:** any of various systems for locating lines by means of lines; esp Cartesian coordinate system

2) **Origin (of the coordinate system):** the intersection of the axes in a coordinate system, the point (0,0) on a coordinate graph

3) **X-Axis:** the axis in a plane Cartesian coordinate system to which

4) **Y-Axis:** any of the four quadrants into which something is divided by 2 lines that intersect each other at right angles, esp. any of the 2 # of the 4 parts into which a plane is divided by rectangular coordinate axes

5) **Quadrants:** any of the four quadrants into which something is divided by 2 lines that intersect each other at right angles, esp. any of the 2 # of the 4 parts into which a plane is divided by rectangular coordinate axes

6) **Ordered Pair:** if a set with 2 elements is identified as the first and the other as the second, the 2 # which are measured - graph

7) **X-Coordinate:** Abscissa - tells you how far left and right of the origin

8) **Y-Coordinate:** Ordinate - tells you how far up and down of the origin.

9) **Direction Pair:** _____

Is this the same as an ORDERED PAIR? Explain. _____

10) **Slope:** _____

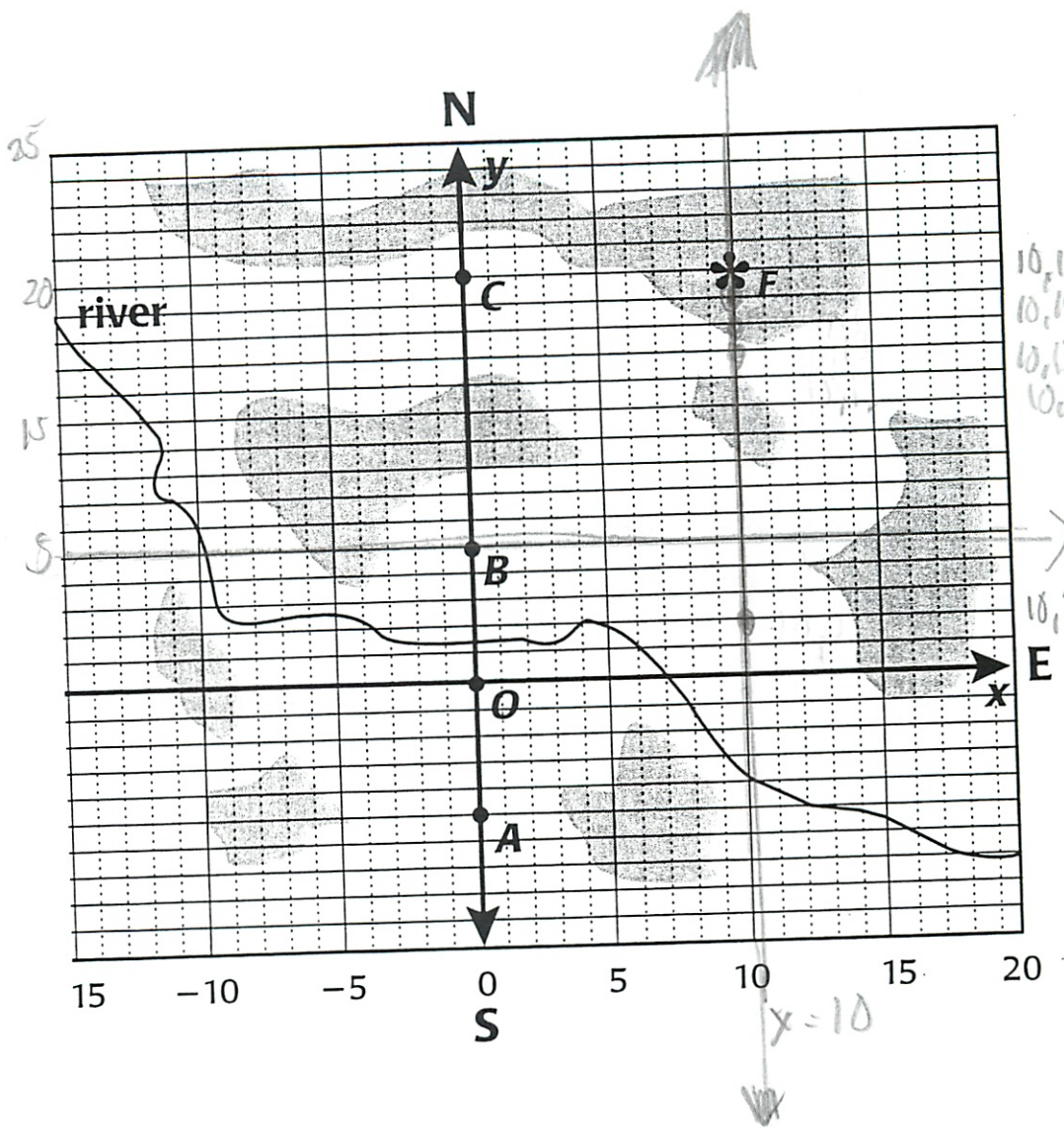
11) **Y-intercept:** _____

12) **Equation – Slope-Intercept form:** _____

a system based on Cartesian coordinate (either of 2 coordinate that locate a point on a plane and measure its distance one of 2 usual perpendicular axes along a line parallel to the other axis) -
The rep. of points in a space in relation to ref. lines

Page 11

$S=Y$



10, 15
10, 14
10, 13
10, 12

10, 2

$x=10$

Student Activity Sheet 4

Name _____

4

Use with *Graphing Equations*, pages 12 and 13.

13. There are firebreaks that follow parts of the lines described by the equations $x = 14$, $x = 16$, $x = 18$, $y = 8$, $y = 6$, $y = 4$, $y = 2$, and $y = 0$.

a. Draw the firebreaks through the wooded regions of the park on the graph below.

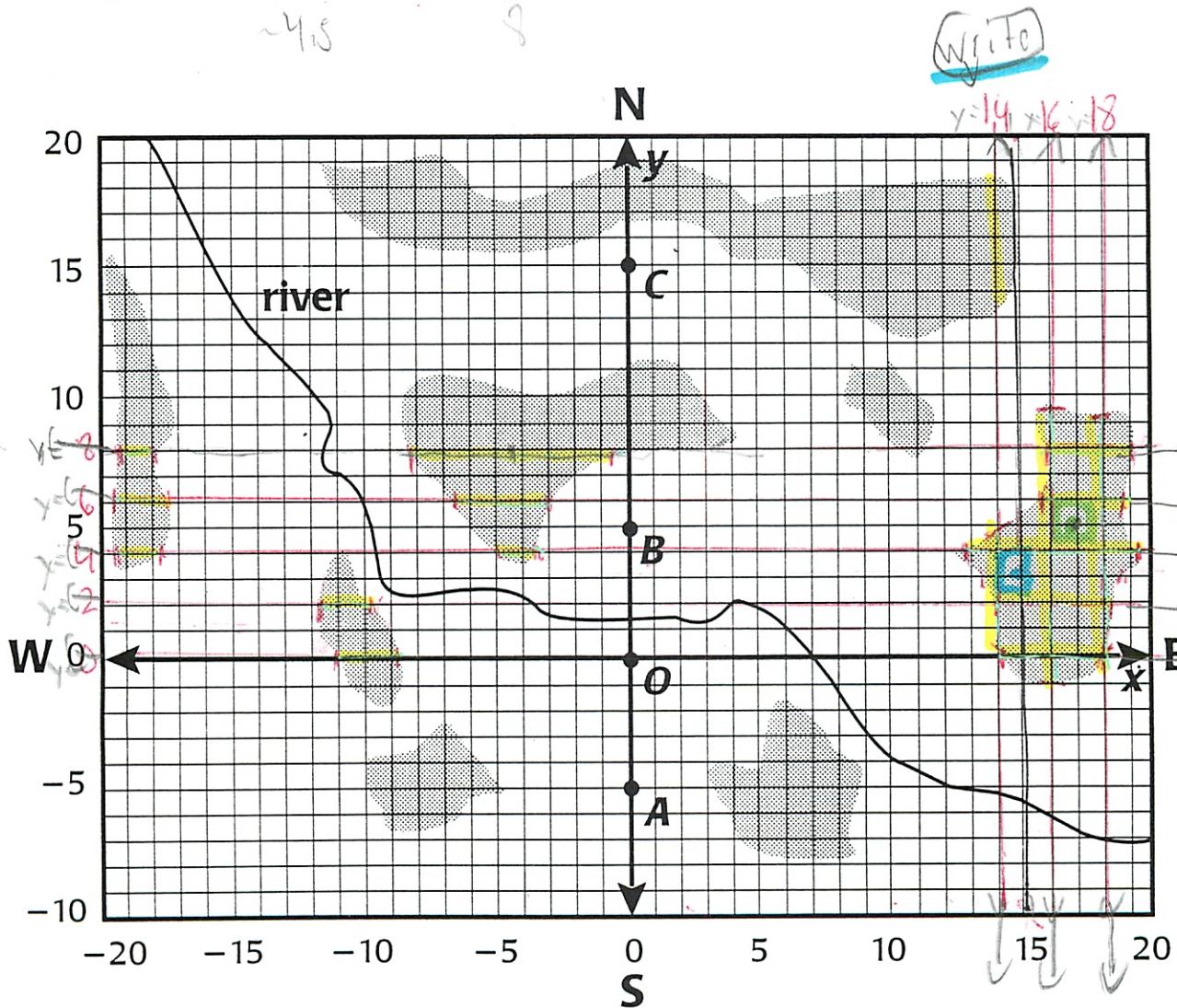
b. Which of these firebreaks is the longest? Approximately how long is it?

14. Show the restricted region for a fire that starts at the point $(17, 5)$.

15. Another fire starts at the point $(15, 3)$. The fire is restricted to a region by four firebreaks.

Show the region on the graph and describe it.

16. Use this graph and a pencil of a different color to show the region described by the inequalities $-6 < x < -3$ and $6 < y < 10$.

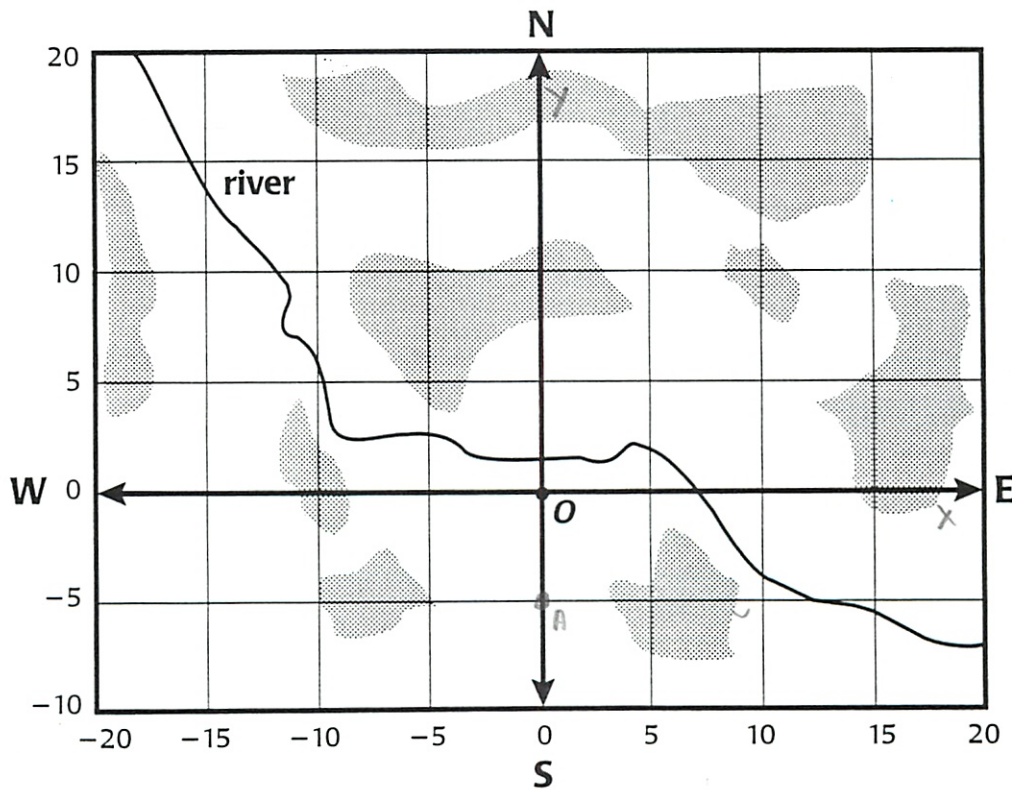
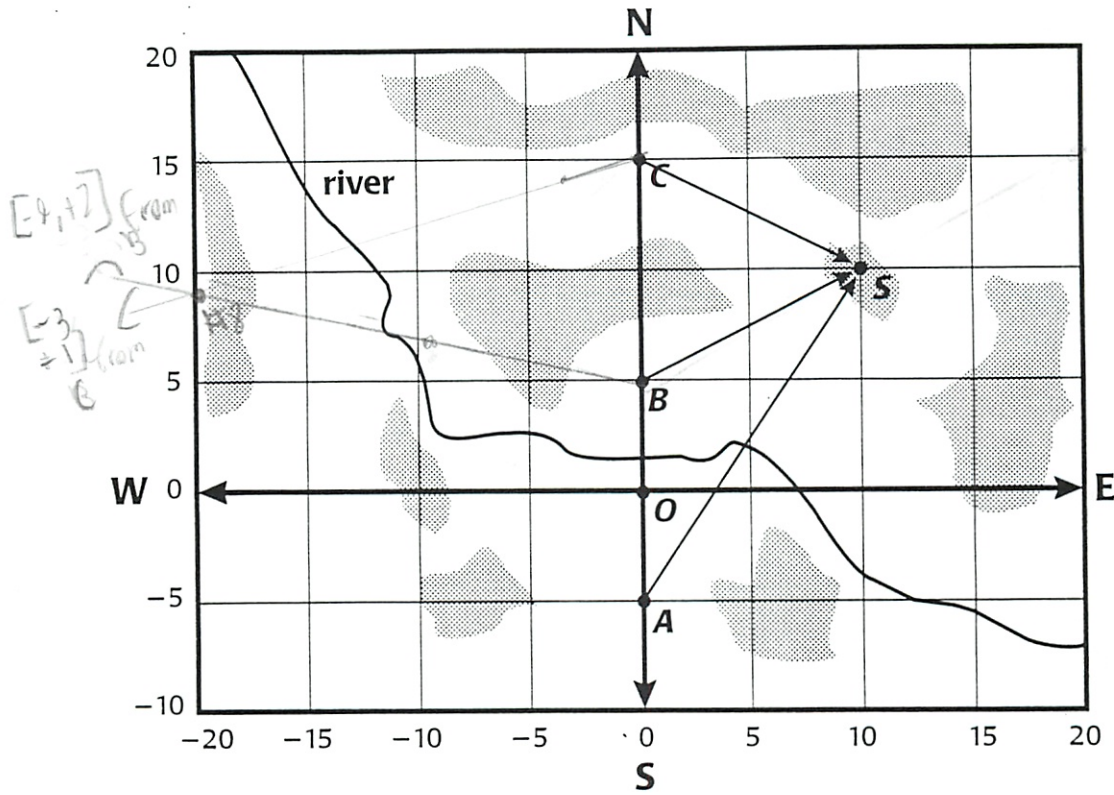


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Student Activity Sheet 5

Name _____

Use with *Graphing Equations*, pages 16, 18, and 19.

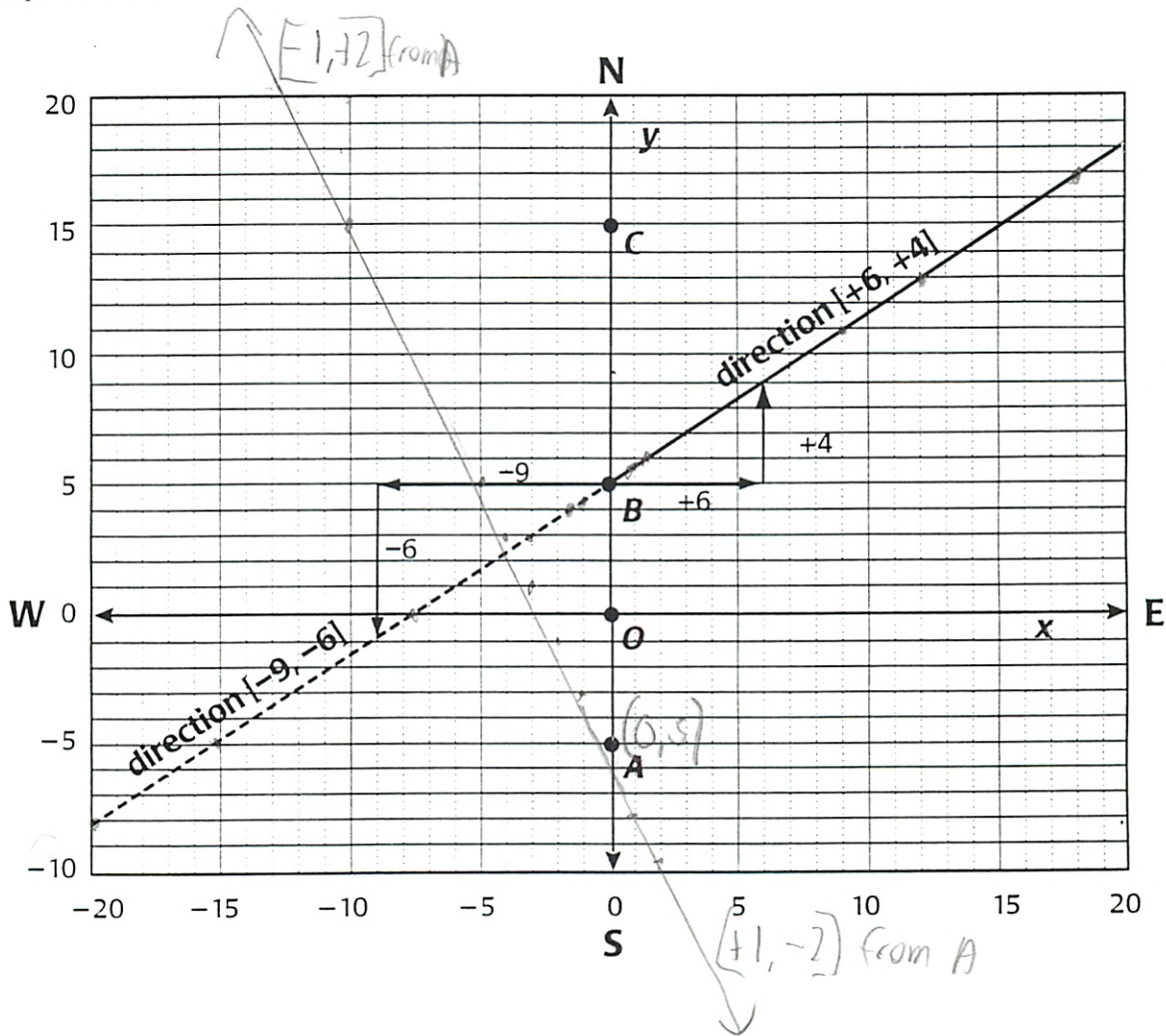


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13. Use the map on the bottom of **Student Activity Sheet 5**.

- Label the point $A(0, -5)$ on the map.
- Show all the points on the map that are in the direction $[-1, +2]$ from A .
- Show all the points on the map that are in the direction $[+1, -2]$ from A .
- What do you notice in your answers for parts **b** and **c**?

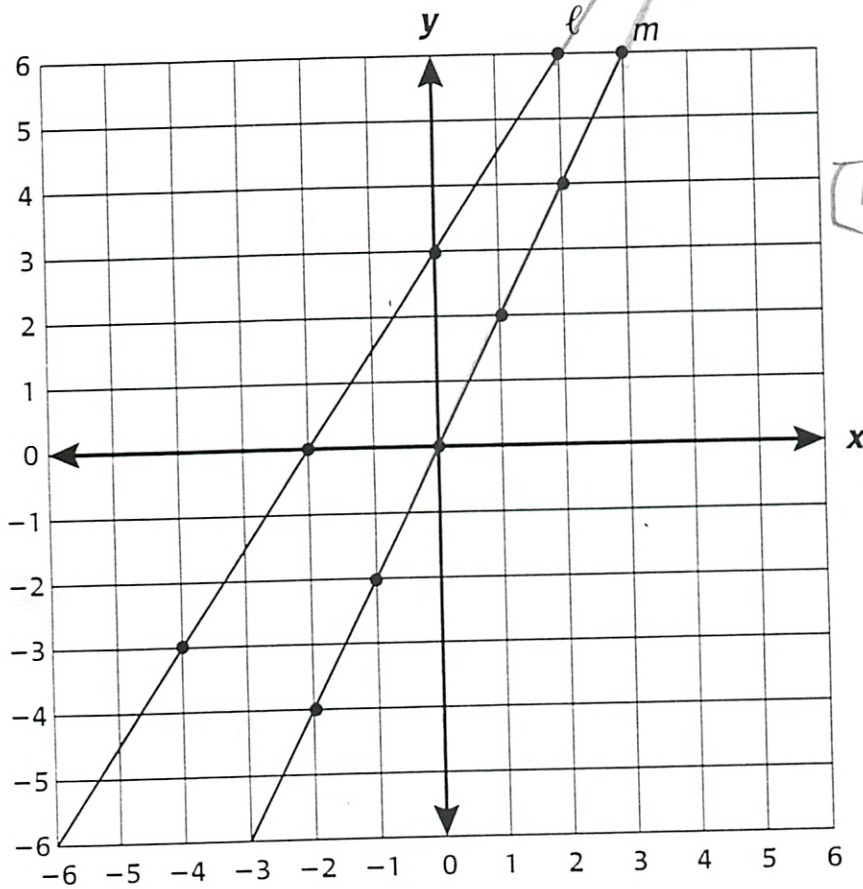
The two number pairs $[+6, +4]$ and $[-9, -6]$ represent opposite directions. Below, all the points from B in the directions $[+6, +4]$ and $[-9, -6]$ are drawn. The result is a complete line.



- Give three other direction pairs on the solid part of the line through B .
 - Give three other direction pairs on the dotted part of the line through B .
 - What do all six direction pairs have in common?

19. In the graph below, the two lines are not parallel.

- a. Find the slope of each line.
- b. This grid is too small to show the point where the two lines meet. Find the coordinates of this point, and explain your method for finding it.



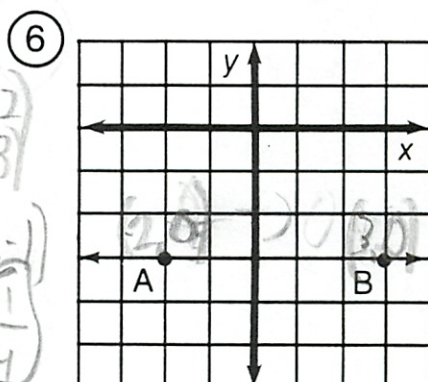
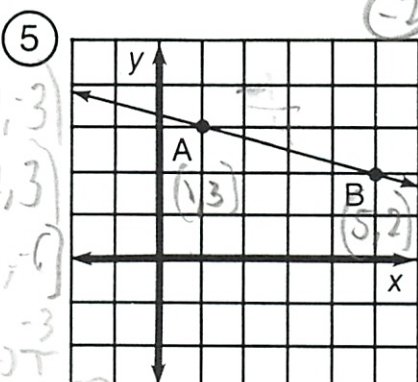
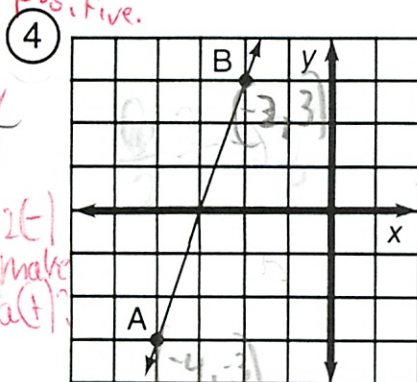
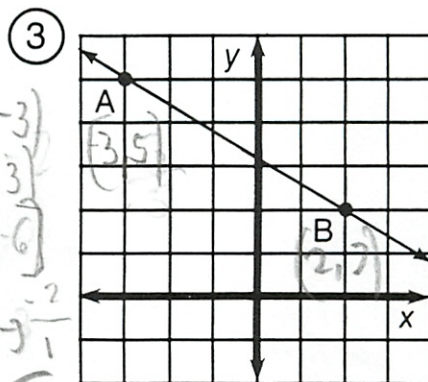
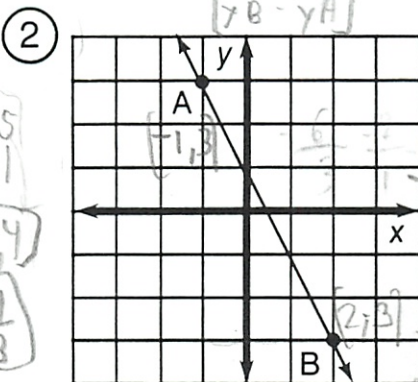
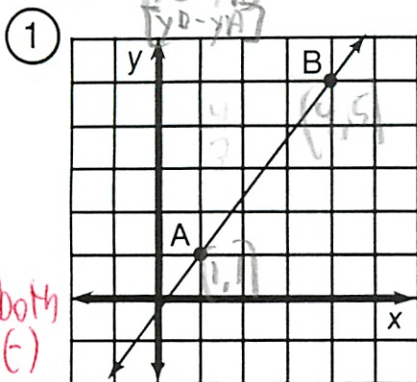
$(6, 12)$

m
 $(3, 6)$
 $(4, 8)$
 $(5, 10)$
 $(6, 12)$
 $[1, 2]$

l
 $(2, 6)$
 $(4, 9)$
 $(6, 12)$
 $[2, 3]$

What Do You Call a Duck That Steals?

For the first six exercises, find the slope of the line \overleftrightarrow{AB} . For the remaining exercises, find the slope of the line that passes through the two given points. Cross out each box in the rectangle below that contains a correct answer. When you finish, print the letters from the remaining boxes in the spaces at the bottom of the page.



⑦ (2, 1); (5, 3)

⑪ (9, 2); (3, -1)

⑮ (-4, -8); (-2, 0)

⑧ (8, 3); (2, 5)

⑫ (-5, 8); (-4, 2)

⑯ (-3, -3); (0, 0)

⑨ (1, -4); (6, -2)

⑬ (0, -1); (4, -7)

⑰ (2, 5); (9, 1)

⑩ (-3, 1); (-7, 4)

⑭ (1, -1); (-2, -6)

⑱ (0, 0); (-2, 7)

DU	AB	CK	ST	AR	IG	AT	OB	IG	ET	BE	ST
0	-6	$-\frac{3}{5}$	$-\frac{4}{7}$	9	$\frac{1}{2}$	$-\frac{7}{2}$	$-\frac{7}{6}$	$\frac{4}{3}$	$\frac{2}{3}$	$-\frac{5}{4}$	$\frac{5}{3}$
CA	RD	RI	CH	UC	RI	ME	AQ	UA	KY	ET	CK
$\frac{2}{5}$	$\frac{1}{6}$	$-\frac{1}{4}$	-2	-8	$-\frac{3}{2}$	1	$-\frac{1}{3}$	$-\frac{3}{4}$	$\frac{8}{5}$	4	3

A R O A B E R D U C K Y

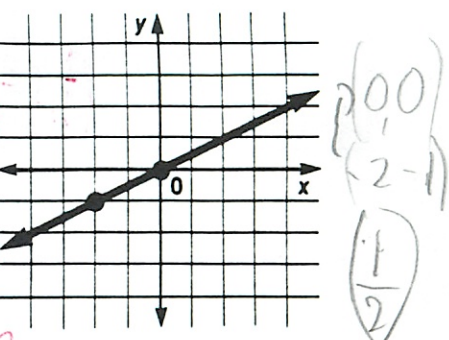
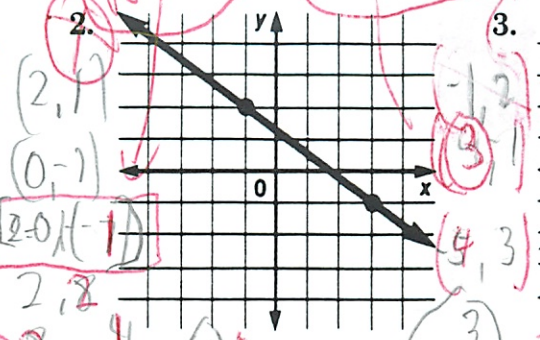
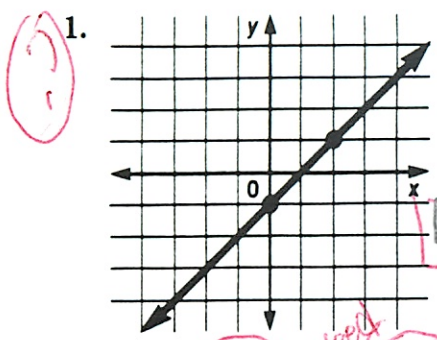
Graphing the Line

#	Passing through (contains)	with slope
19	$(-5, 4)$	$\frac{2}{3}$
20	$(-8, -1)$	$-\frac{4}{5}$
21	$(2, 3)$	0 (no slope)
22	$(4, -1)$	no slope
23	$(0, 0)$	$-\frac{1}{2}$

Practice Worksheet 8-8

Slope

Find the slope of each line.



Find the slope of the line that contains each pair of points.

Not fraction on y axis

4. $M(-2, 3), N(-4, -1)$

5. $P(1, 6), R(-2, 5)$

6. $K(-2, -3), W(5, 10)$

7. $Y(\frac{1}{2}, 3), Z(4, \frac{1}{3})$

8. $H(1.7, 2.4), T(2.5, -1.3)$

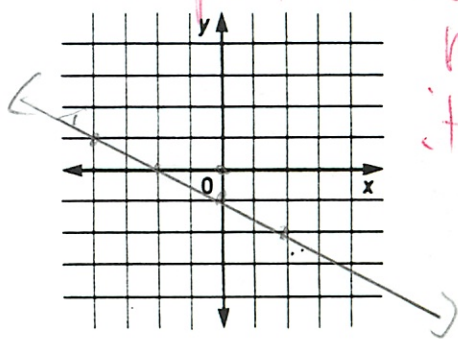
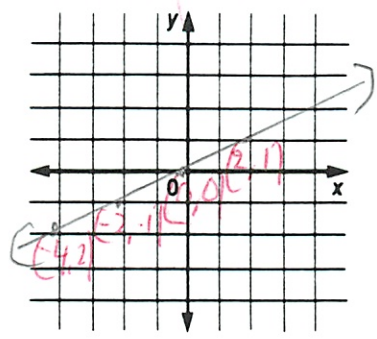
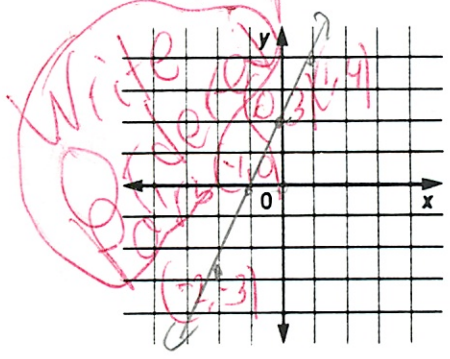
9. $P(\frac{4}{5}, 3), L(-\frac{1}{3}, -1)$

Graph the line that contains the given point and has the given slope.

10. $R(-2, -3), 2$

11. $T(-4, -2), \frac{1}{2}$

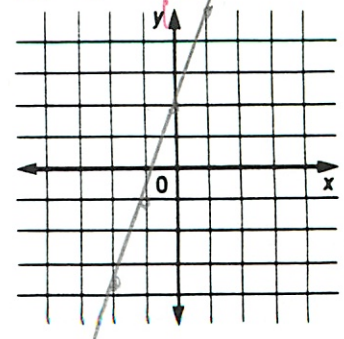
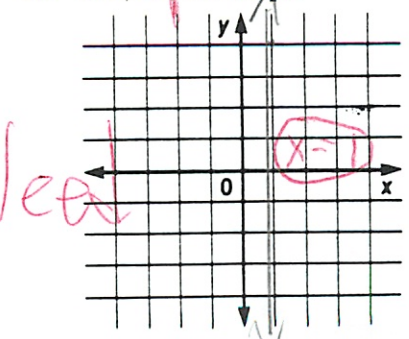
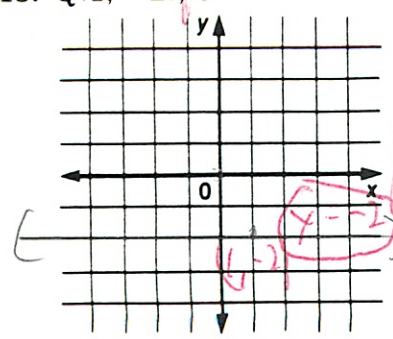
12. $W(-4, 1), -\frac{1}{2}$



13. $Q(1, -2), 0$

14. $L(1, 4), \text{no slope}$

15. $M(-2, -4), 3$



7

8

GE-4

10/30

$$\#7) \left(\frac{1}{2}, 3 \right) \left(4, \frac{1}{3} \right)$$

$$\left[\frac{1}{2} - 4, 3 - \frac{1}{3} \right]$$

$$\left[3\frac{1}{2}, 2\frac{2}{3} \right]$$

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

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

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

$$\frac{8}{3} \times \frac{2}{7} = \frac{16}{21}$$

$$\left(1.7, 2.4 \right)$$

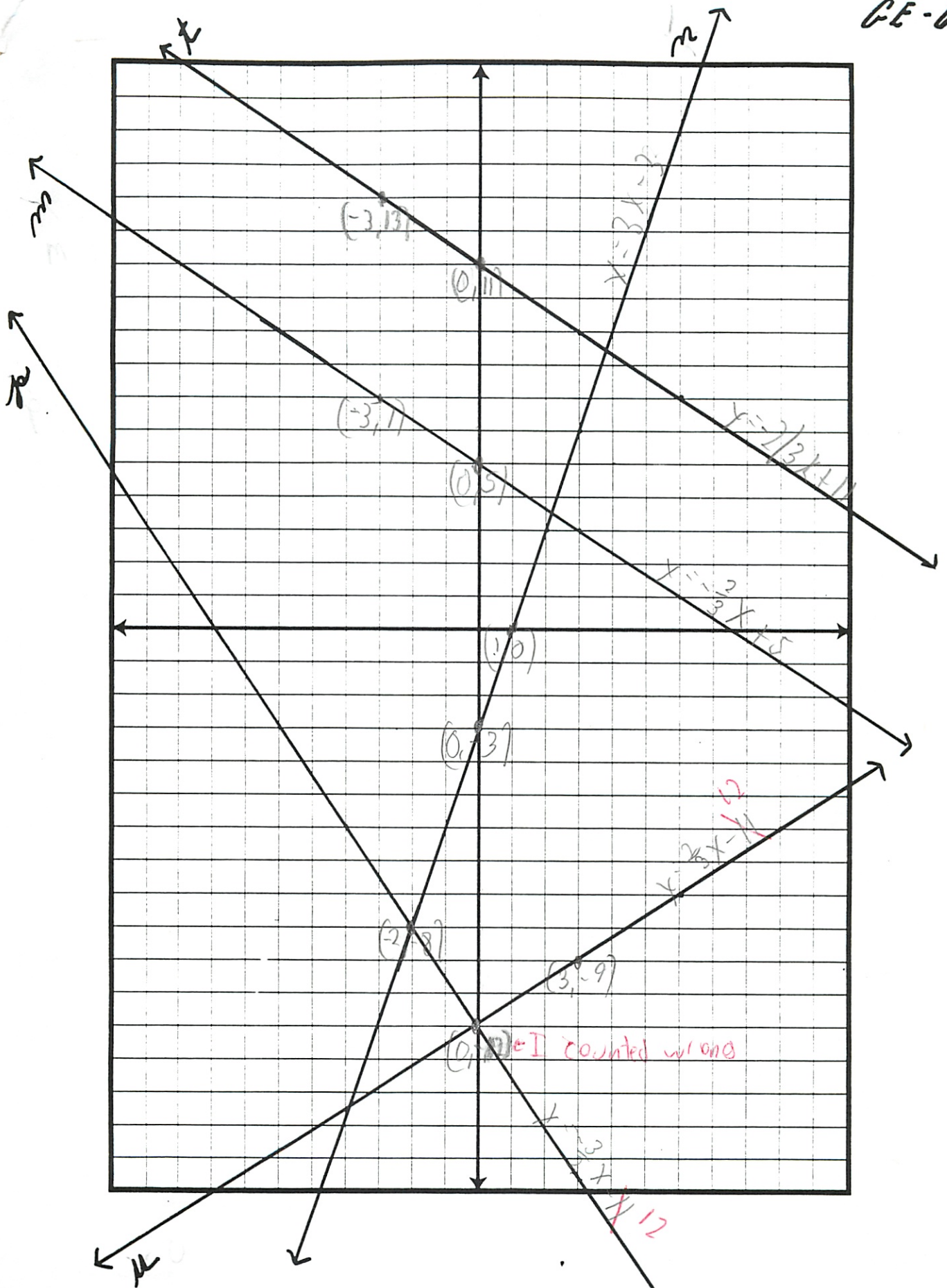
$$\left(2.5, -1.3 \right)$$

$$\left[1.7 - 2.5, 2.4 - (-1.3) \right]$$

$$\left[-0.8, 3.7 \right]$$

$$\frac{y}{x} = \frac{3.7}{-0.8}$$

$$\frac{3.7}{-0.8} \rightarrow \times 10 \rightarrow \frac{37}{-8}$$

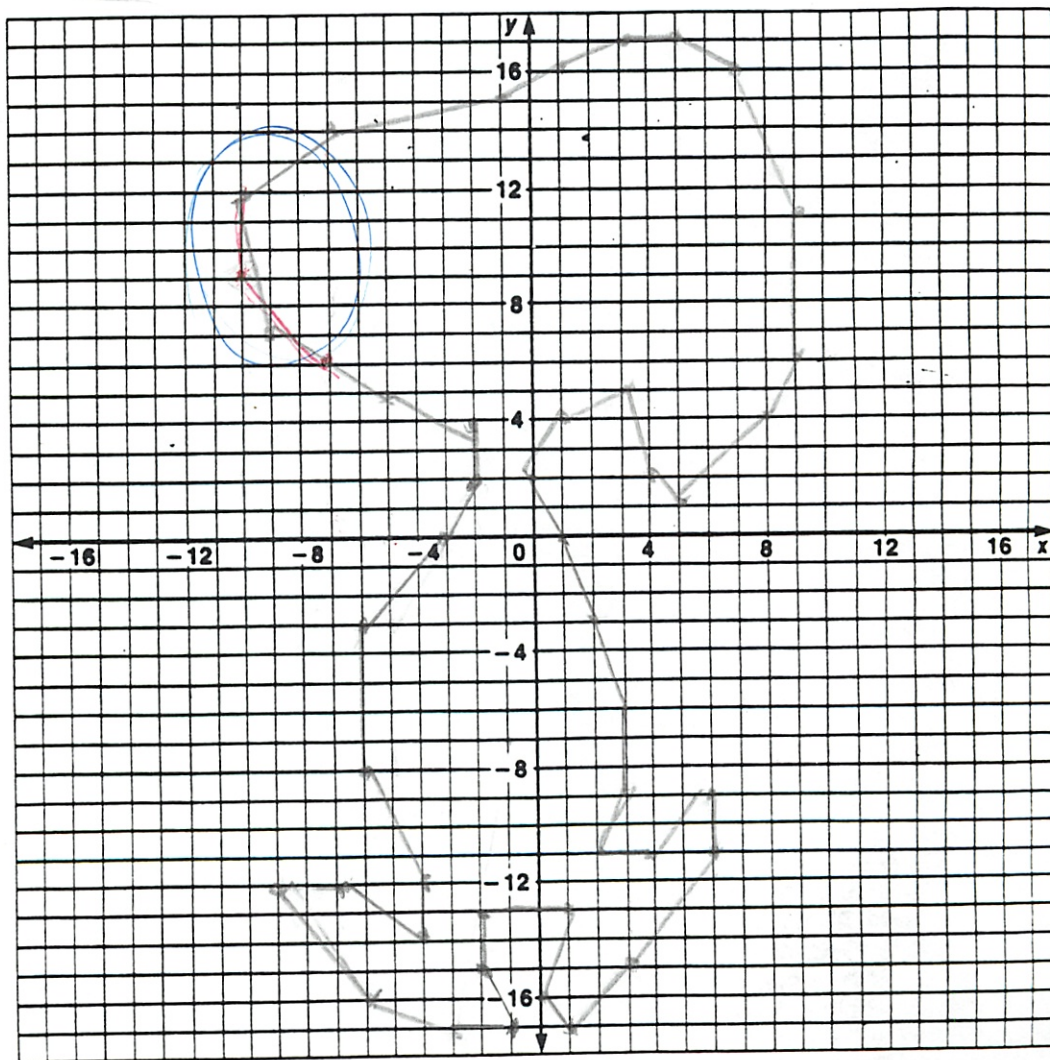


$4\frac{1}{2}$
 $\frac{1}{5}$

The Coordinate System

Graph each of the points below. Connect the points in order as you graph them.

- | | | | | |
|---------------|-------------|-------------|--------------|---------------|
| 1. (-2, 2) | 22. (3, -9) | 28. (3, 5) | 34. (7, 16) | 40. (-10, 12) |
| 2. (-4, 0) | 23. (3, -6) | 29. (4, 2) | 35. (5, 17) | 41. (-10, 9) |
| 3. (-6, -3) | 24. (2, -3) | 30. (5, 1) | 36. (3, 17) | 42. (-7, 6) |
| 4. (-6, -8) | 25. (1, 0) | 31. (8, 4) | 37. (1, 16) | 43. (-5, 5) |
| 5. (-4, -12) | 26. (0, 2) | 32. (9, 7) | 38. (-1, 15) | 44. (-2, 4) |
| 6. (-4, -14) | 27. (1, 4) | 33. (9, 11) | 39. (-7, 14) | 45. (-2, 2) |
| 7. (-7, -12) | | | | |
| 8. (-9, -12) | | | | |
| 9. (-6, -16) | | | | |
| 10. (-3, -17) | | | | |
| 11. (-1, -17) | | | | |
| 12. (-2, -15) | | | | |
| 13. (-2, -13) | | | | |
| 14. (1, -13) | | | | |
| 15. (0, -16) | | | | |
| 16. (1, -17) | | | | |
| 17. (3, -15) | | | | |
| 18. (6, -11) | | | | |
| 19. (6, -9) | | | | |
| 20. (4, -11) | | | | |
| 21. (2, -11) | | | | |



Michael Plasmeyer

$$\frac{22}{20} \rightarrow 5\frac{12}{5} \text{ ft.}$$

GE-2

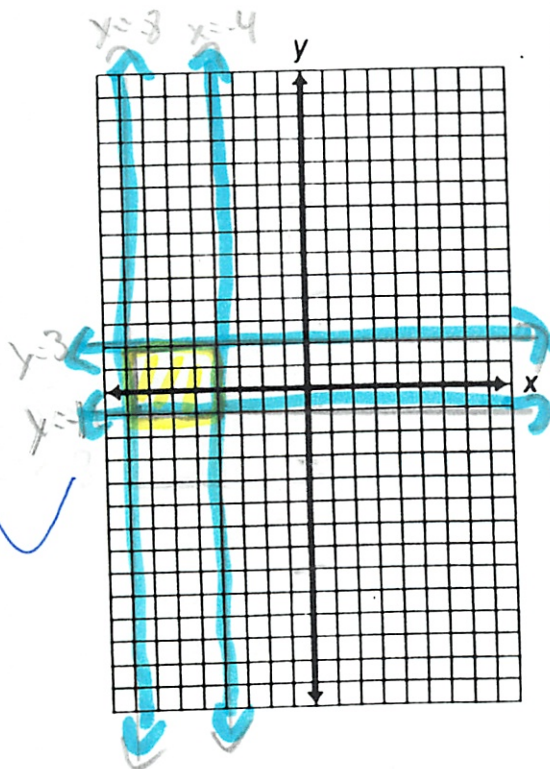
- 1) Another fire starts at the point (17,1). The fire is restricted to a region by four firebreaks (Page 8 #13). Show the region (Student-Activity Sheet 4) and describe it (inequalities).

Use firebreaks on p 12 #13. Graph All of them on paper
 $16 < x < 18$ and $0 < y < 2$

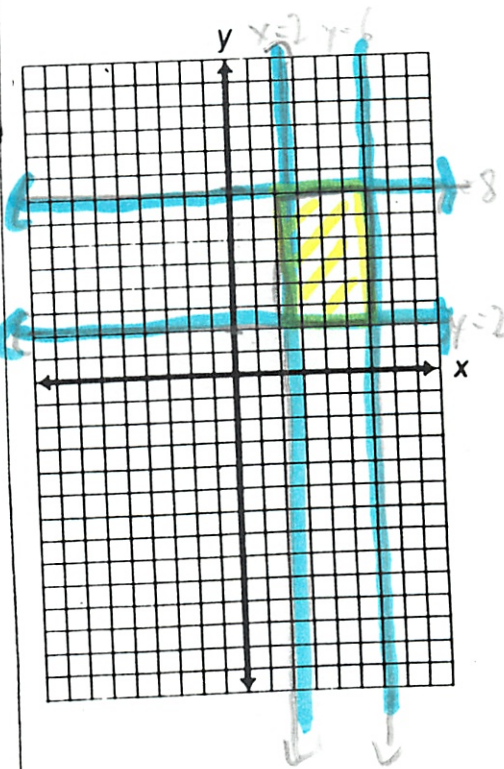
- 2) Show the regions described by the following inequalities:

A

$$\begin{aligned} -8 < x < -4 \\ \text{and} \\ -1 < y < 3 \end{aligned}$$



$$\begin{aligned} 2 < B < 6 \\ 6 > x > 2 \\ \text{and} \\ 2 < y < 8 \end{aligned}$$

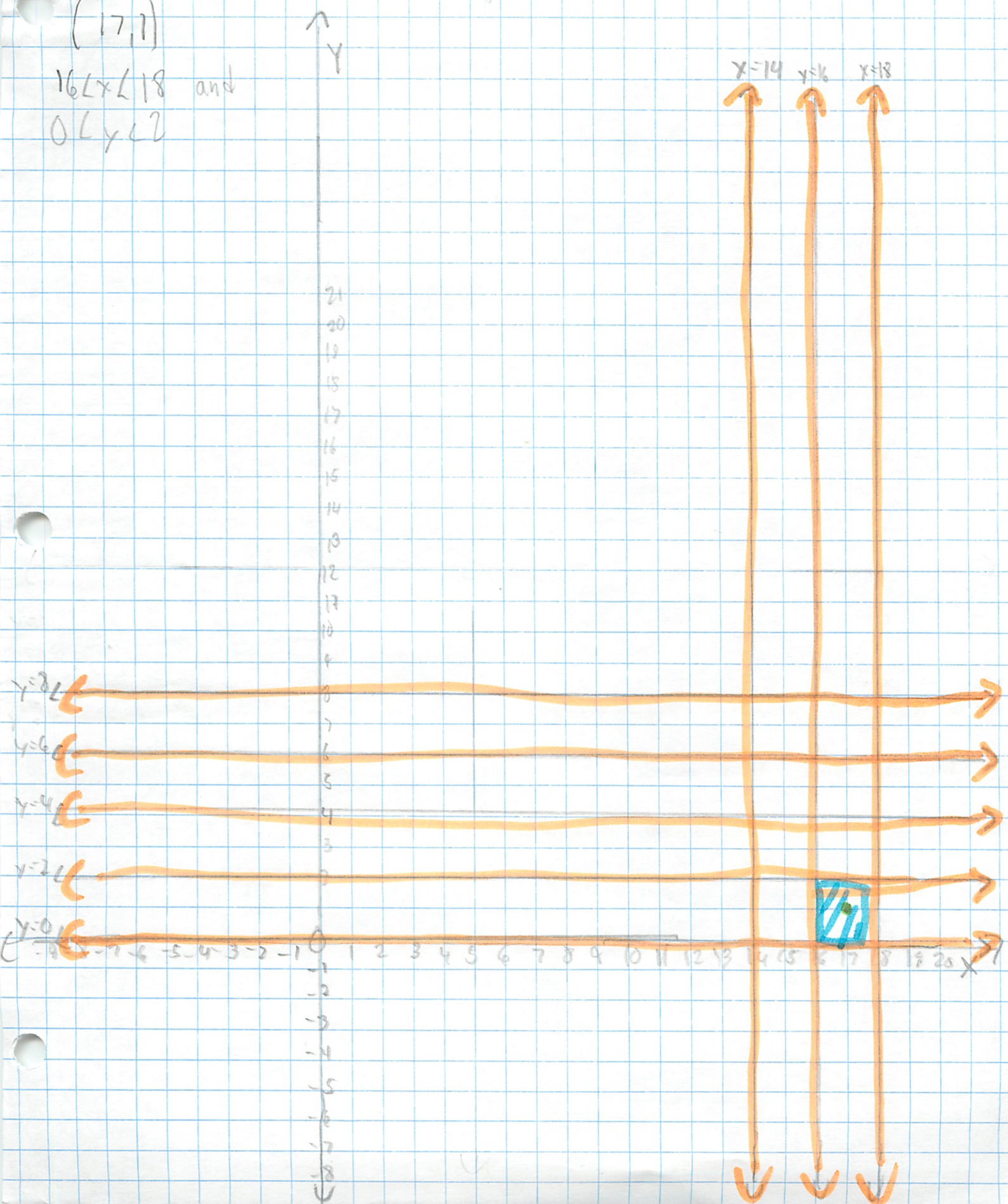


6E-2 #1

$$x=14, x=16, x=18, y=8, y=6, y=4, y=2, y=0$$

(17,1)

$16 < x < 18$ and
 $0 < y < 2$



$x=14$ $y=6$ $x=18$

$y=8$

$y=6$

$y=4$

$y=2$

$y=0$



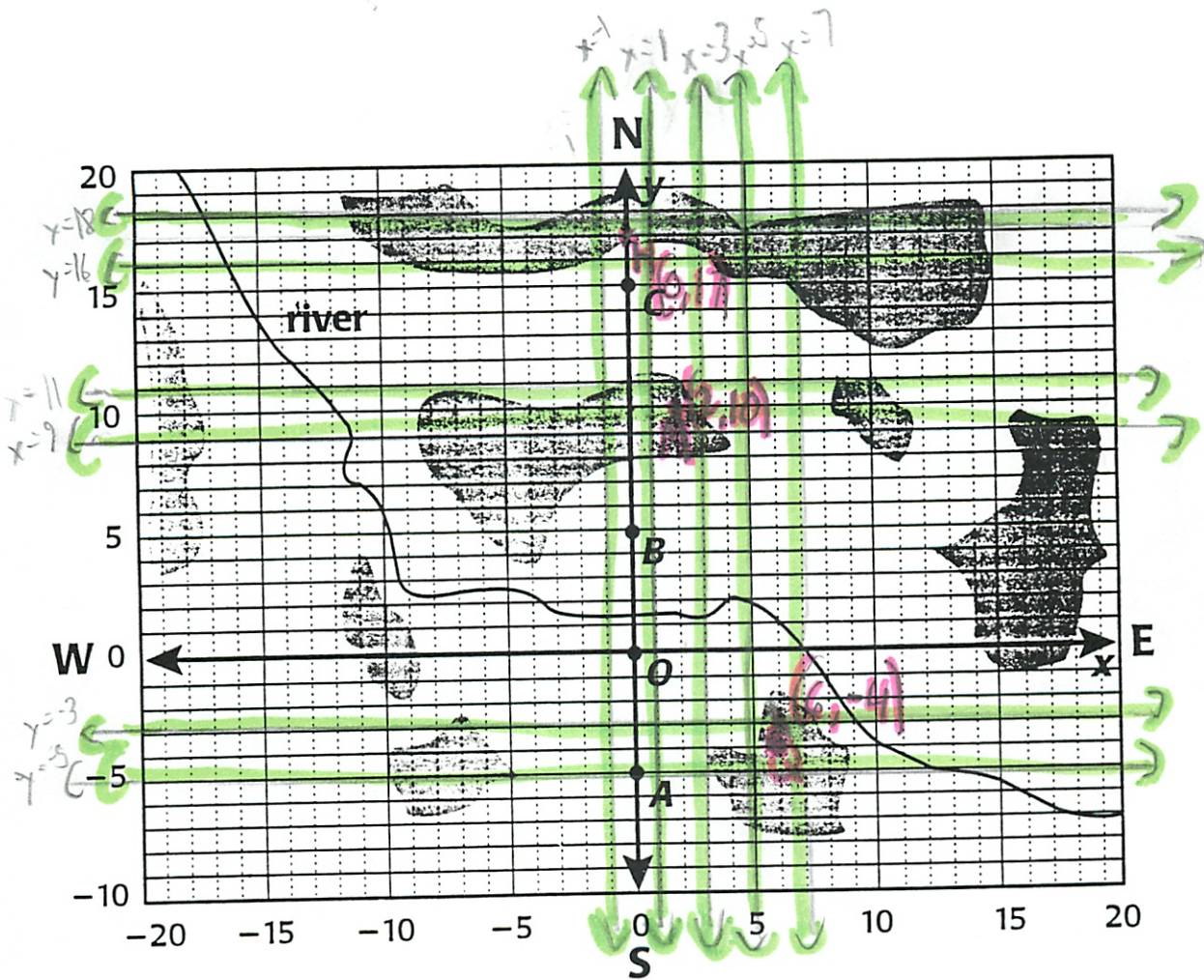
Michael Plasmeier

Graphing Equations

GE-2A

There are fires at the following points: M (2,10)
H (0,17)
Q (6,-4)

Locate & label each fire on the graph below. Use the graph to answer question #s 1-3.



20/20 5/5

GE-2A (cont'd)

1) What direction, measured in degrees, should be given to the firefighters at towers A, B and C for each fire?

Fire M	Fire H	Fire Q
Tower A = 7°	A 0°	A 85°
1) Tower B = 15° 21°	B 0°	B 145°
Tower C = 182°	C 0°	C 162°

2) There are fire breaks that follow parts of the lines described by the equations $x = -1, x = 1, x = 3, x = 5, x = 7, y = -3, y = -5, y = 9, y = 11, y = 16$ and $y = 18$. Write inequalities to describe the fire break regions for each fire.

M	H	Q
$-1 < x < 1$ and $16 < y < 18$	$1 < x < 3$ and $9 < y < 11$	$5 < x < 7$ and $-3 < y < -5$

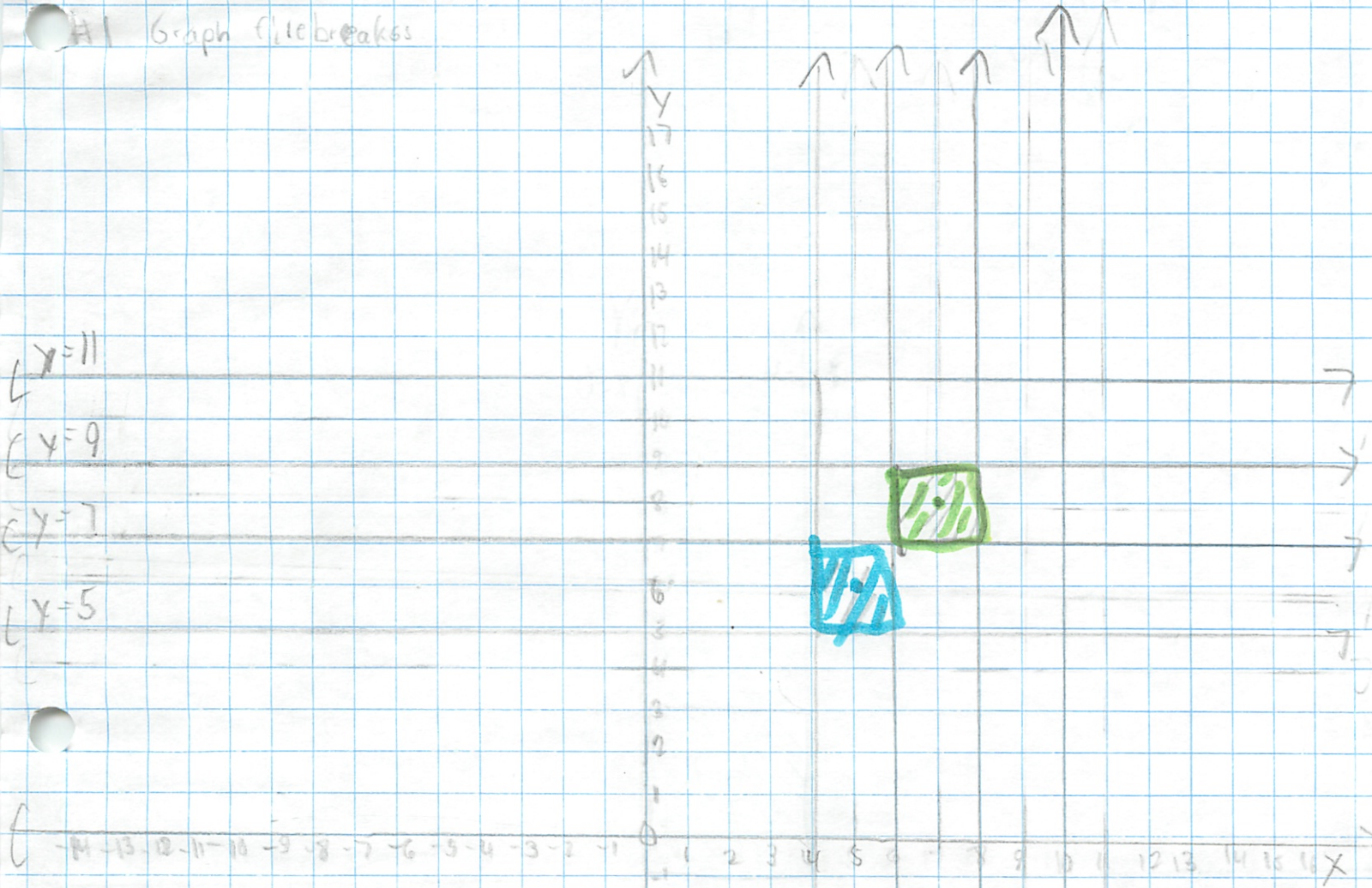
3) Write a direction pair to describe the following:

- The fire at Point M as seen from Point A, from Point B and from Point C. $A = [2, 15] \quad B = [2, 5] \quad C = [2, -5]$
- The fire at Point M as seen from Point H. $[2, -7]$
- The fire at Point M as seen from Point Q. $[-4, 14]$
- The fire at Point H as seen from Point Q. $[-6, 21]$

There are firebrakes that follow parts of the lines:

$$x=10, x=8, x=6, x=4, y=11, y=9, y=7, y=5$$

#1 Graph firebrakes



#2 Another fire starts at point $(7, 8)$. Show the region and describe it (inequalities)

$$6 < x < 8 \text{ and } 7 < y < 9$$

#3 $(5, 6)$ - $4 < x < 6$ and $5 < y < 7$

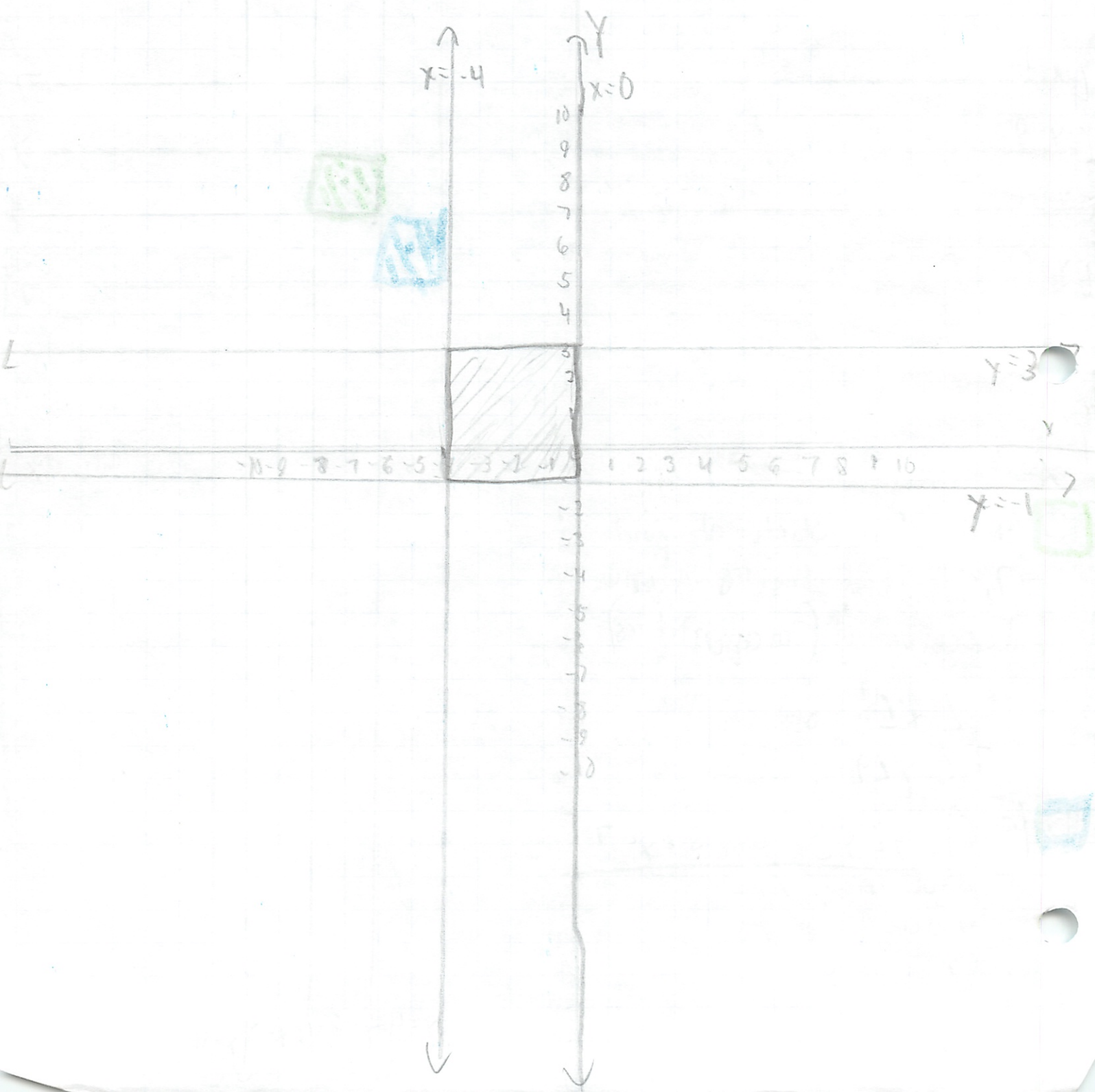
x goes through x
 y goes through y

$$x=4, x=6, x=8, x=10$$

Show the region describe by the following inequalities:-

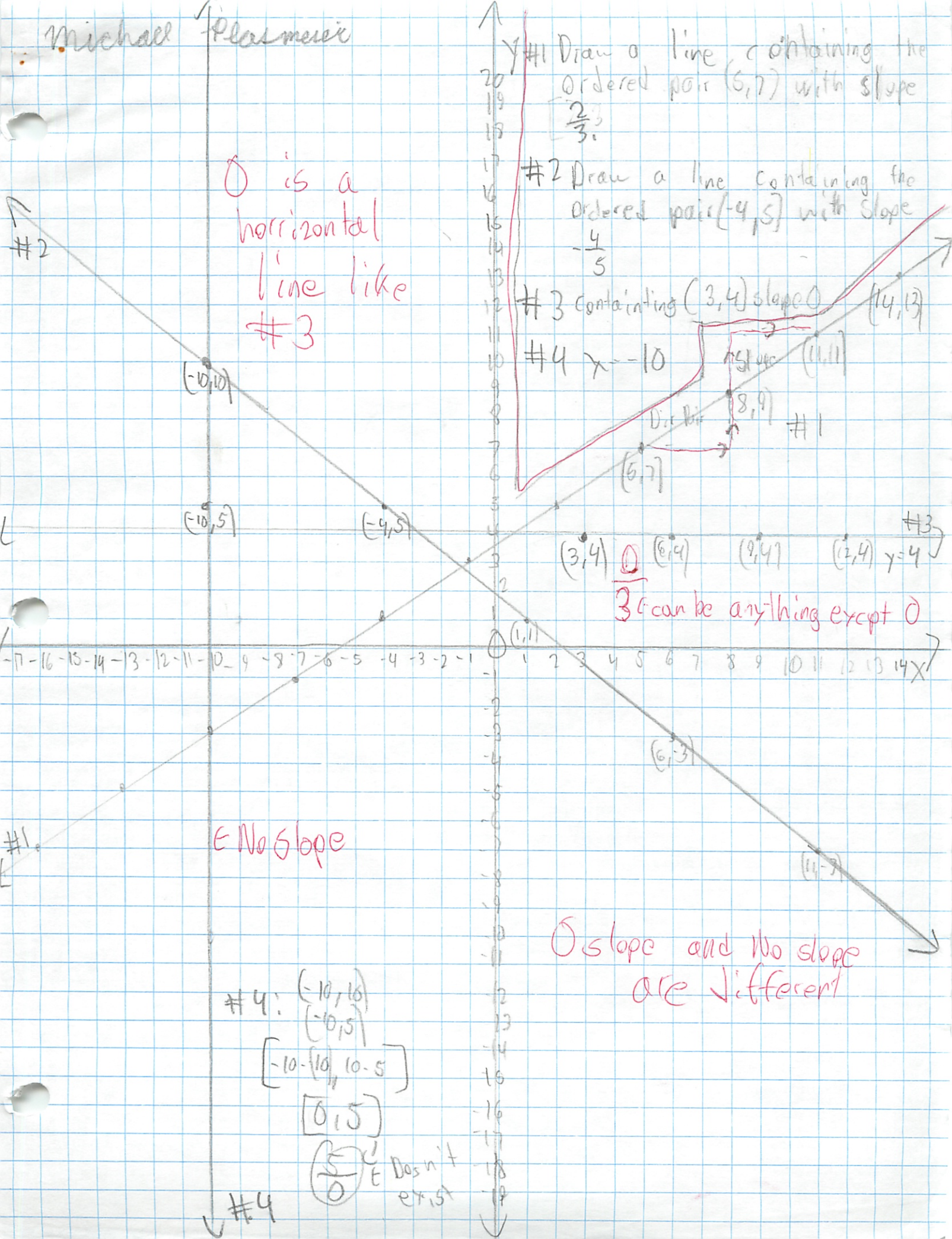
$$-4 < x < 0 \text{ and } -1 < y < 3$$

$x = -4$ | $x = 0$ $y = -1$ | $y = 3$



Michael

Plasmereic



0 is a horizontal line like #3

#1 Draw a line containing the ordered pair (6,7) with slope $\frac{2}{3}$

#2 Draw a line containing the ordered pair (-4,5) with slope $\frac{4}{5}$

#3 containing (3,4) slope 0

#4 $x = -10$

0 can be anything except 0

∞ No slope

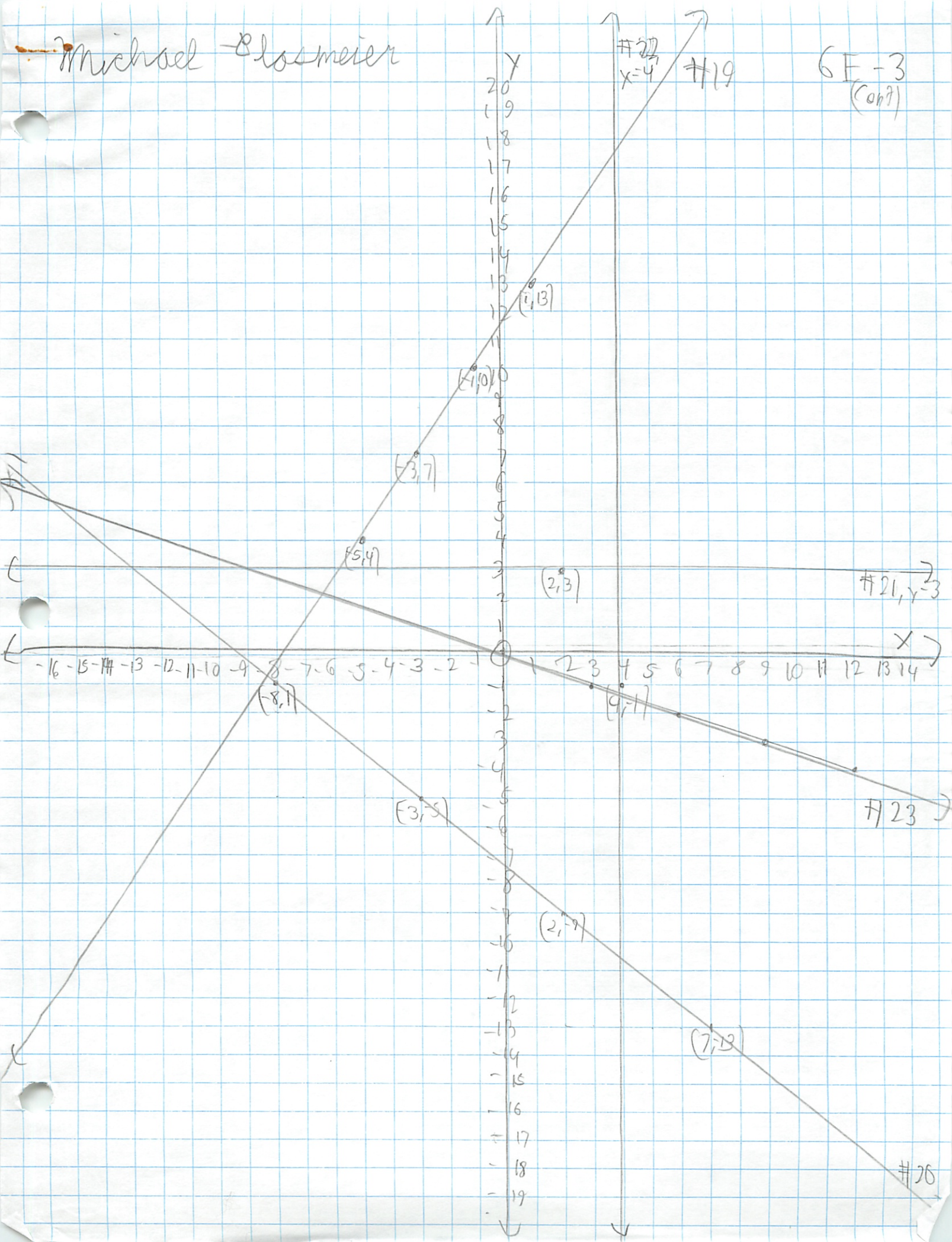
0 slope and No slope are different

#4: $(-10, 10)$
 $(-10, 5)$
 $[-10, -10, 10, 5]$
 $[0, 5]$
 $(\frac{5}{0})$ ∞ Doesn't exist

#4

Michael Blösmeyer

6F-3
(cont?)



Find the slope of the line that contains the following points. Be sure to show process. Show process on separate paper.

1) (-2,6) (3,-4)

-2

4) (3,2) (-1,2)

0

2) (-8,7) (-8,-1)

No Slope

5) (5,2) (2,-7)

3

3) (-2,-4) (3,-3)

$\frac{1}{5}$

6) (0,-4) (-4,0)

-1

Graph the line that contains the given point and has the given slope. Be sure to move your slope three (3) times and label all points. Graph all on the same large graph.

7) point \rightarrow (-2,-1)

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

8) point \rightarrow (2,1)

slope $\rightarrow 0$

9) point \rightarrow (-3,7)

slope \rightarrow no slope

10) point \rightarrow (4,5)

slope $\rightarrow \frac{4}{5}$

11) point \rightarrow (3,-2)

slope $\rightarrow \frac{2}{1}$

over \rightarrow

Find Slope

Show this

1. $(-2, 6) (3, -4)$ \rightarrow $\begin{pmatrix} 3, -4 \\ -2, 6 \\ 5, -10 \end{pmatrix}$ \rightarrow $\frac{-10}{5} \rightarrow \left(\frac{-2}{1}\right) \rightarrow -2$

Here $[3 - (-2), -4 - 6]$

If it is that go for -7

2. $(8, 7) (8, -1)$ \rightarrow $\begin{pmatrix} 8, 7 \\ -8, -1 \\ 0, 8 \end{pmatrix}$ \rightarrow $\frac{8}{0} \rightarrow$ **No Slope**

high high

3. $(2, -4) (3, -3)$ \rightarrow $\begin{pmatrix} 3, -3 \\ -2, -4 \\ 5, 1 \end{pmatrix}$ \rightarrow $\left(\frac{1}{5}\right)$

high high

On bottom is No Slope

On top is 0 slope

4. $(3, 2) (-1, 2)$ \rightarrow $\begin{pmatrix} 3, 2 \\ -1, 2 \\ 4, 0 \end{pmatrix}$ \rightarrow $\frac{0}{4} \rightarrow 0$

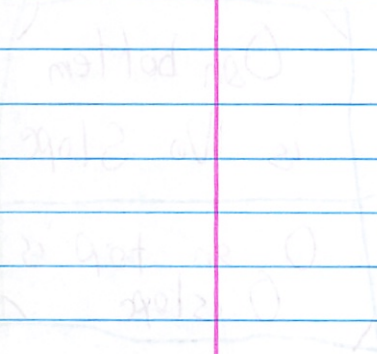
5. $(5, 2) (2, -7)$ \rightarrow $\begin{pmatrix} 5, 2 \\ 2, -7 \\ 3, 9 \end{pmatrix}$ \rightarrow $\frac{9}{3} \Rightarrow \frac{3}{1} \rightarrow 3$

6. $(0, -4) (-4, 0)$ \rightarrow $\begin{pmatrix} 0, -4 \\ -4, 0 \\ 4, -4 \end{pmatrix}$ \rightarrow $\frac{-4}{4} \Rightarrow \frac{-1}{1} \rightarrow -1$

show this

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$$

$$\frac{3}{0}$$

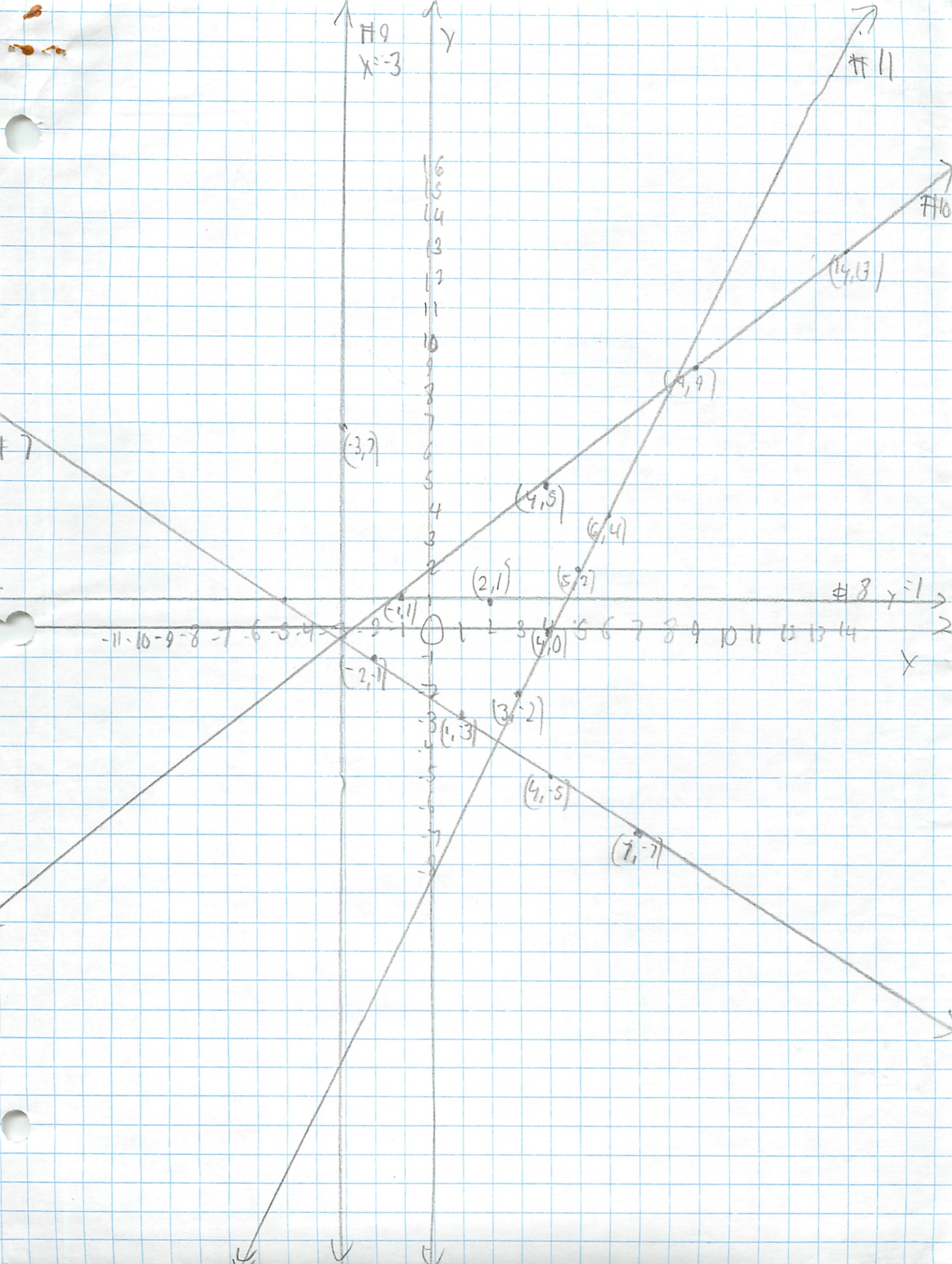


$$\frac{1}{0}$$

$$\frac{1}{0}$$

$$\frac{1}{0} \frac{1}{0} \frac{1}{0}$$

$$\frac{1}{0} \frac{1}{0} \frac{1}{0}$$



Home work
Michael Plummer

10/30

A. Find the slope

$$1. (4, -1) (-1, -2) = \underline{\frac{1}{5}}$$

$$2. (-2, 7) (-2, 3) = \underline{\text{No Slope}}$$

B. Graph

$$3. (-3, 4); \frac{-2}{3}$$

$$4. (1, 1); 0$$

$$1. (4, -1)$$

$$(-1, -2)$$

$$[4 - (-1), -1 - (-2)]$$

$$[5, 1]$$

$$\frac{y}{x} \rightarrow \left(\frac{1}{5}\right)$$

$$2. (-2, 7)$$

$$(-2, 3)$$

$$[-2 - (-2), 7 - 3]$$

$$[0, 4]$$

$$\frac{y}{x} \rightarrow \frac{4}{0} \rightarrow \text{No slope}$$

10/30

Home work

Math 101

1. Let $f(x) = x^2 + 3x - 2$

$$f'(x) = 2x + 3$$

$$f''(x) = 2$$

2. Let $f(x) = \ln(x)$

$$f'(x) = \frac{1}{x}$$

$$f''(x) = -\frac{1}{x^2}$$

$$f(x) = x^3$$

$$f'(x) = 3x^2$$

$$f''(x) = 6x$$

$$f'''(x) = 6$$

$$f(x) = \frac{1}{x}$$

$$f(x) = x^2$$

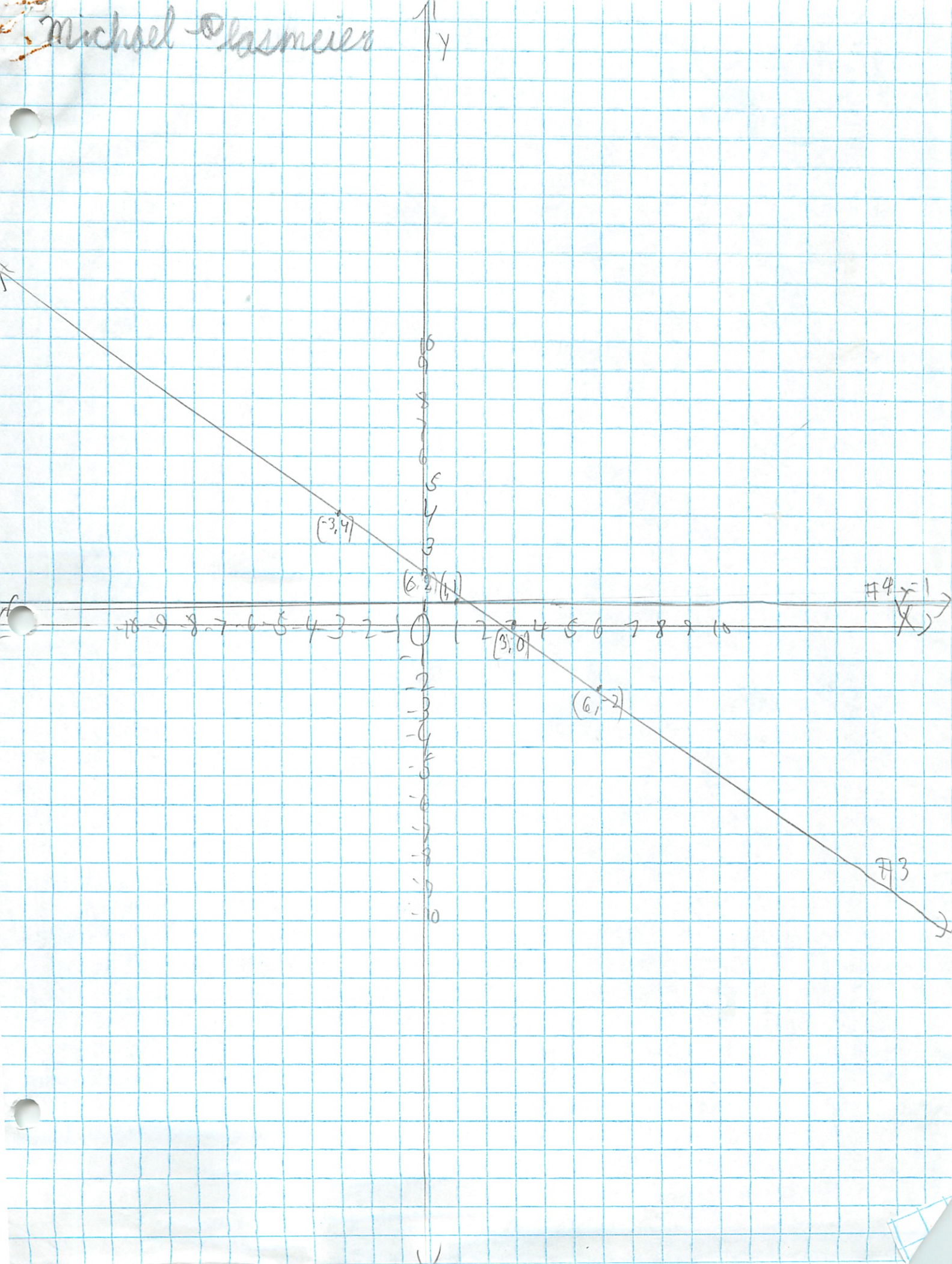
$$f'(x) = 2x$$

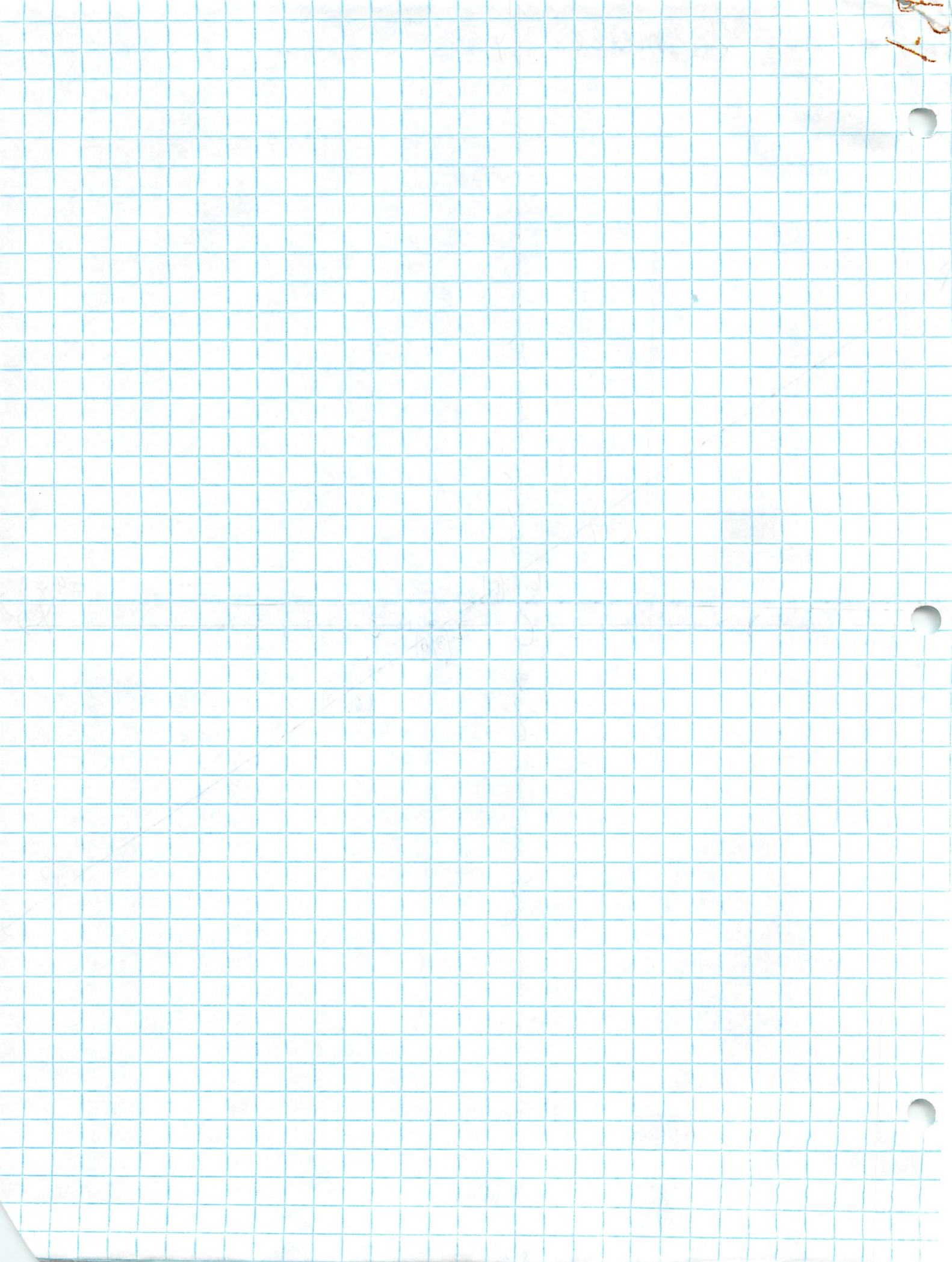
$$f''(x) = 2$$

$$f'''(x) = 0$$

$$f(x) = \frac{1}{x^2}$$

Michael Plasmeyer





Review

10/28

Michael Lasmeier

1. $\begin{pmatrix} 8, 2 \\ 5, -4 \end{pmatrix}$

2. $\begin{pmatrix} 6, 7 \\ -6, -2 \end{pmatrix}$

Reminder

$$[8-5, 2-(-4)]$$

$$[-6-(-6), 7-(-2)]$$

$$[3, 6]$$

$$[0, 9]$$

$$\frac{y}{x} \rightarrow \frac{6}{3} \rightarrow \frac{2}{1} \rightarrow \boxed{2}$$

$$\frac{y}{x} \rightarrow \frac{9}{0} \rightarrow \boxed{\text{No Slope}}$$

3. $\begin{pmatrix} 4, -3 \\ -1, -3 \end{pmatrix}$

4. $\begin{pmatrix} -1, -4 \\ 3, -2 \end{pmatrix}$

$$[4-(-1), -3-(-3)]$$

$$[3-(-1), -2-(-4)]$$

$$[5, 0]$$

$$[4, 2]$$

$$\frac{y}{x} \rightarrow \frac{0}{5} \rightarrow \boxed{0}$$

$$\frac{y}{x} \rightarrow \frac{2}{4} \rightarrow \boxed{\frac{1}{2}}$$

$$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

$$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \cdot \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

$$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

$$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \cdot \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \cdot \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

$$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

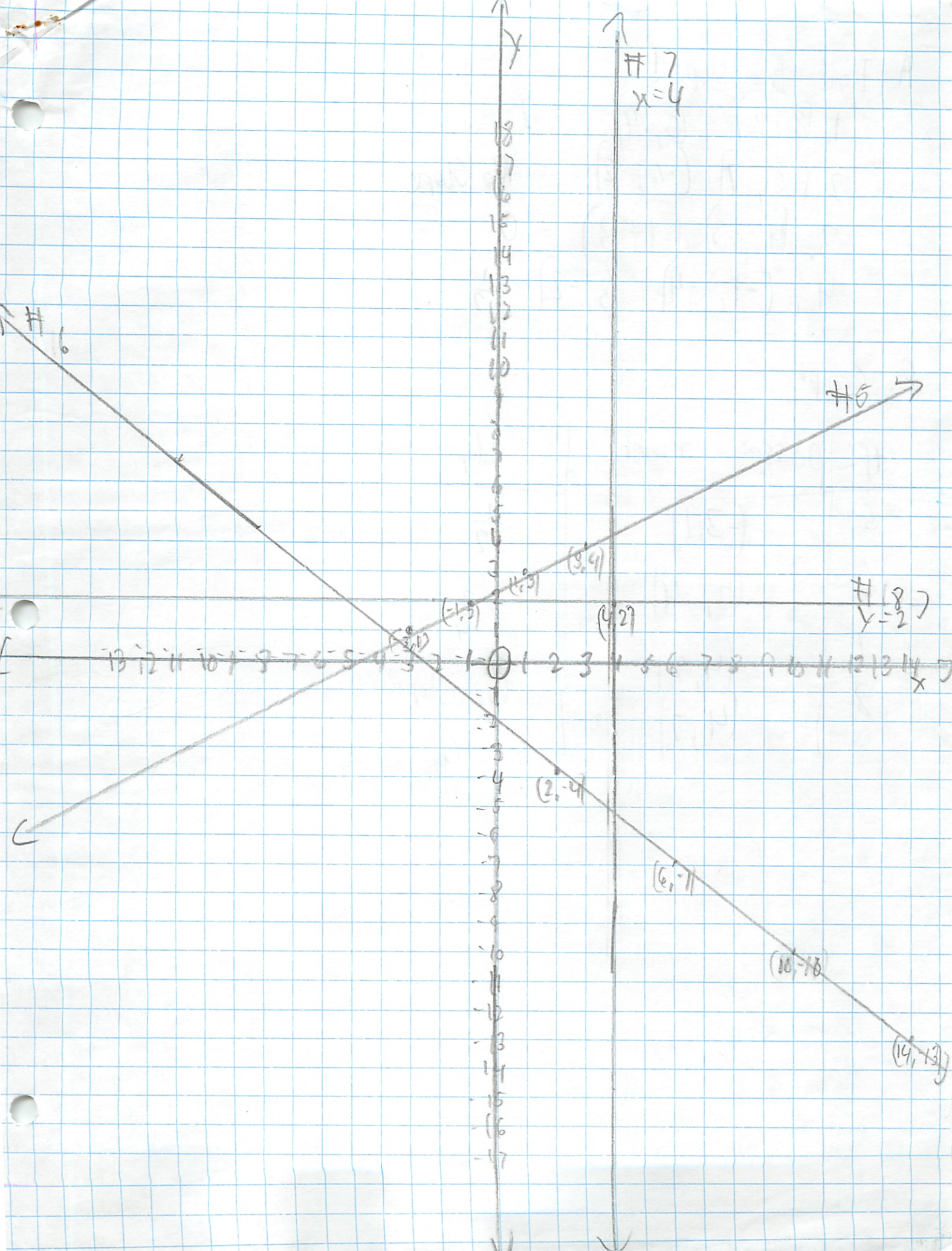
$$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \cdot \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \cdot \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$

$$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$$

$$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

$$\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix} \cdot \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$$



A. Find the slope:

1. $(8, 2)$ $(6, -4)$ = 2

2. $(6, 7)$ $(-6, -2)$ = No Slope

3. $(4, -3)$ $(-1, -3)$ = 0

4. $(-1, -4)$ $(3, -2)$ = $\frac{1}{2}$

B. Graph

#	passes through	slope
5	$(-3, 1)$	$\frac{1}{2}$
6	$(2, -4)$	$-\frac{3}{4}$
7	$(4, 2)$	No Slope
8	$(4, 2)$	0

46/50 ✓

Quiz -- Slope

Name: Michael Plasmeier

Find the slope of the line that contains each pair of points. Be sure to show process.

1) A (-3,-2) B (-5,4)

$$[-5 - (-3), 4 - (-2)]$$

$$[-2, 6]$$

$$\frac{y}{x} = \frac{6}{-2} \rightarrow -\frac{3}{1} \rightarrow \textcircled{-3}$$

3) C (-1,-3) D (-7,2)

$$[-7 - (-1), 2 - (-3)]$$

$$[-6, 5]$$

$$\frac{y}{x} = \textcircled{-\frac{5}{6}}$$

2) E (-2,-2) F (7,1)

$$[7 - (-2), 1 - (-2)]$$

$$[9, 3]$$

$$\frac{y}{x} = \frac{3}{9} \rightarrow \textcircled{\frac{1}{3}}$$

4) G (5,10) H (1,3)

$$[5 - 1, 10 - 3]$$

$$[4, 7]$$

$$\frac{y}{x} = \textcircled{\frac{7}{4}}$$

Find the slope of each line.

5)

Points: (-3, 8), (-1, 4), (1, 0), (4, -4)

$$[-1 - (-3), 4 - 8]$$

$$[-2, -4]$$

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

6)

Points: (-3, -4), (0, 0), (3, 4), (6, 8)

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

$$[3, 4]$$

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

Graph the line that contains the given point and has the given slope. Be sure to label the points (4).

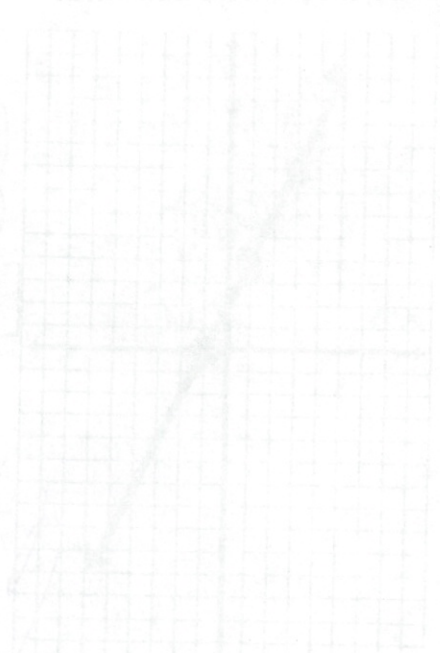
7) $K(-4, -8)$; $\frac{2}{3}$

9) $P(4, 6)$; no slope

8) $Q(4, 6)$; 0

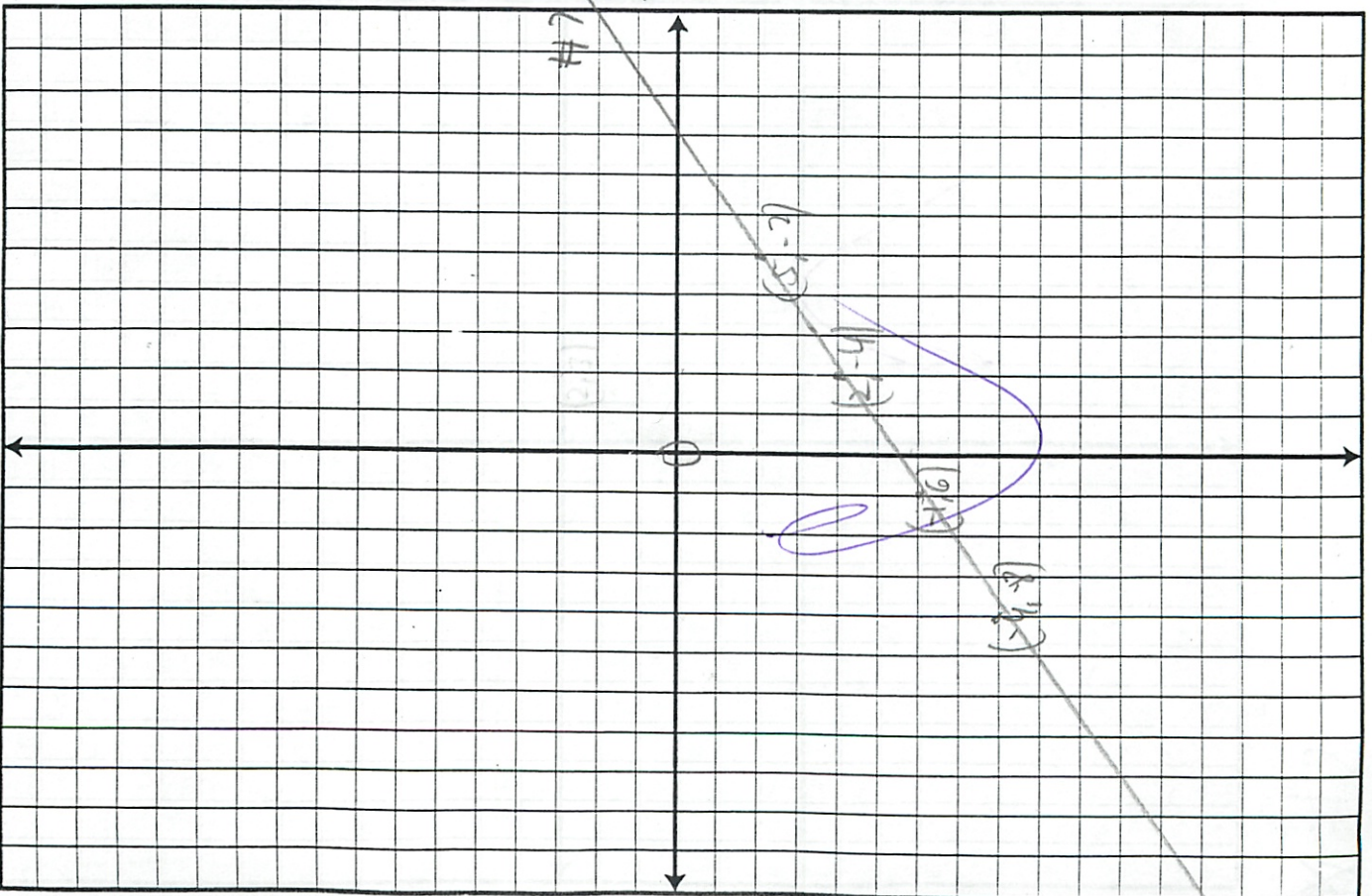
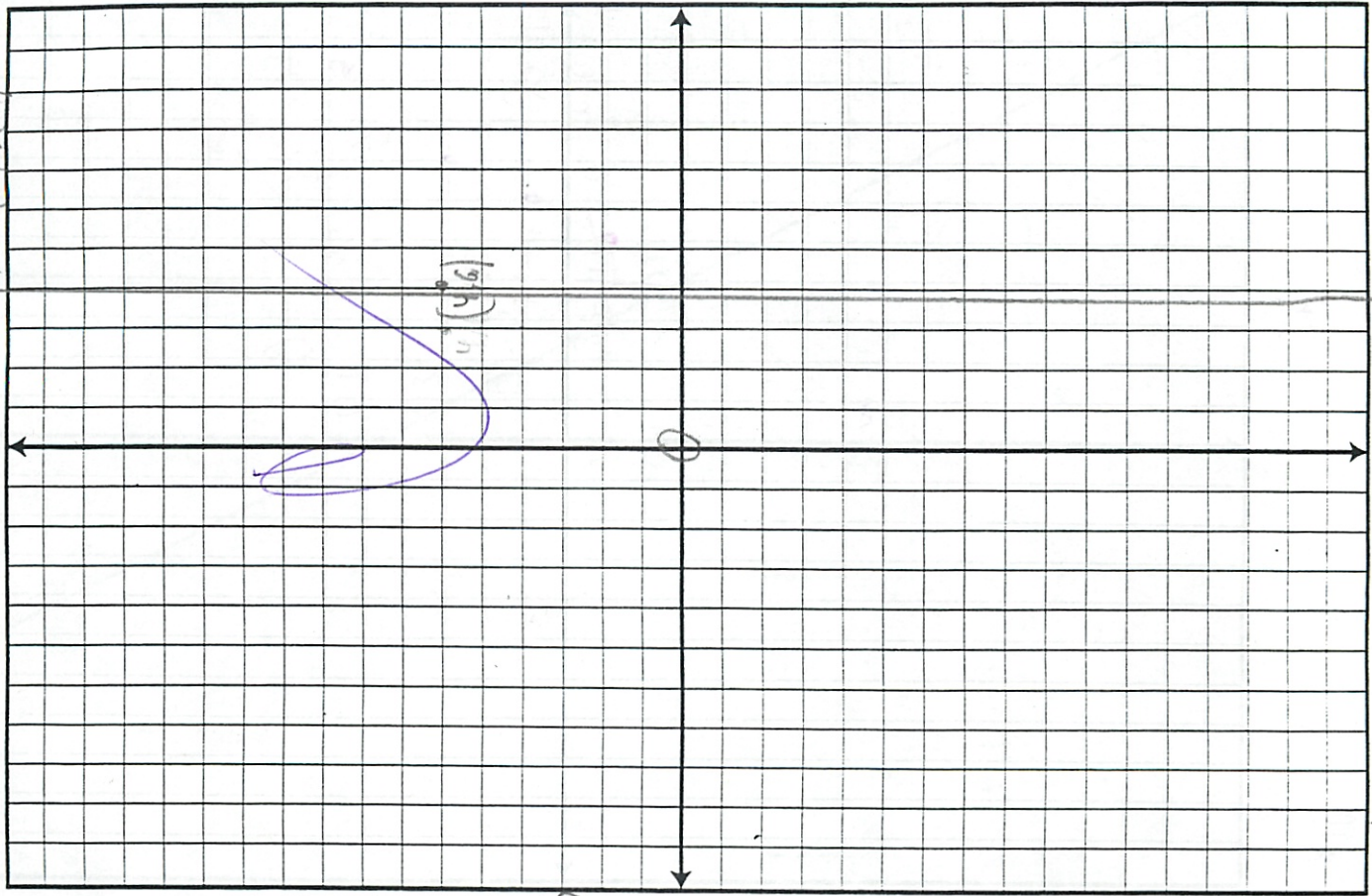
10) $N(4, 3)$; -2

Switched



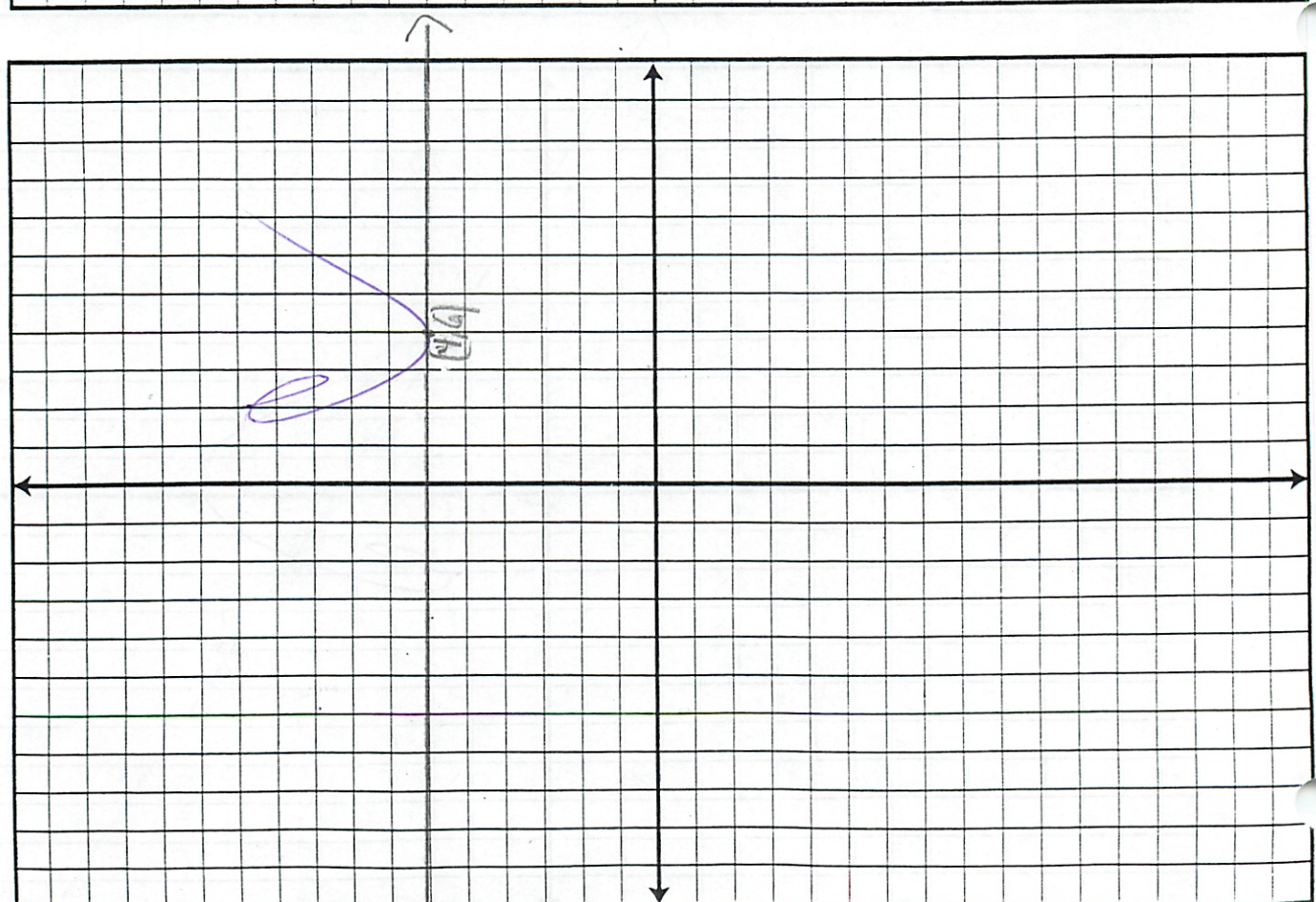
Name: Michael Bleicher

#9



#7

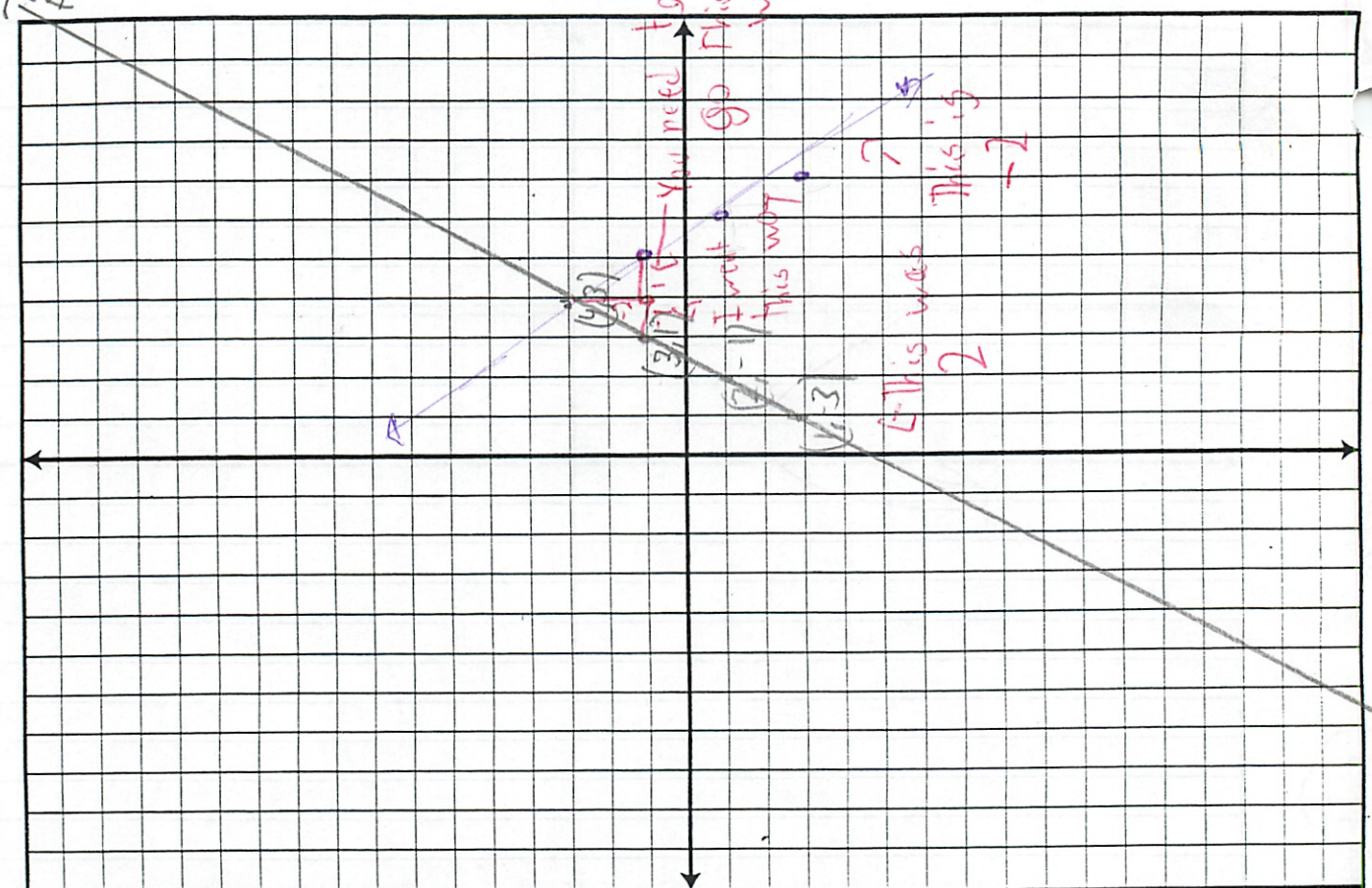
#8



#8

#10

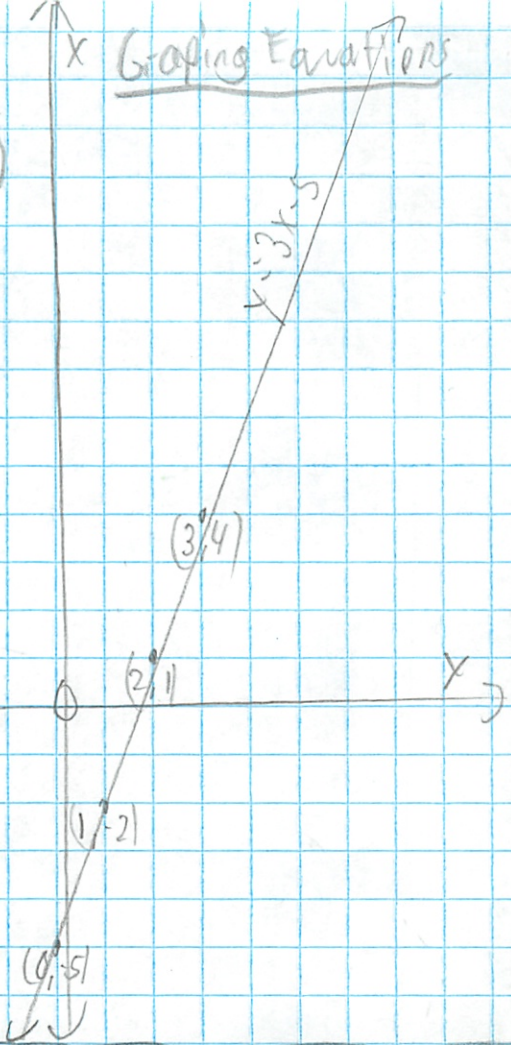
#10



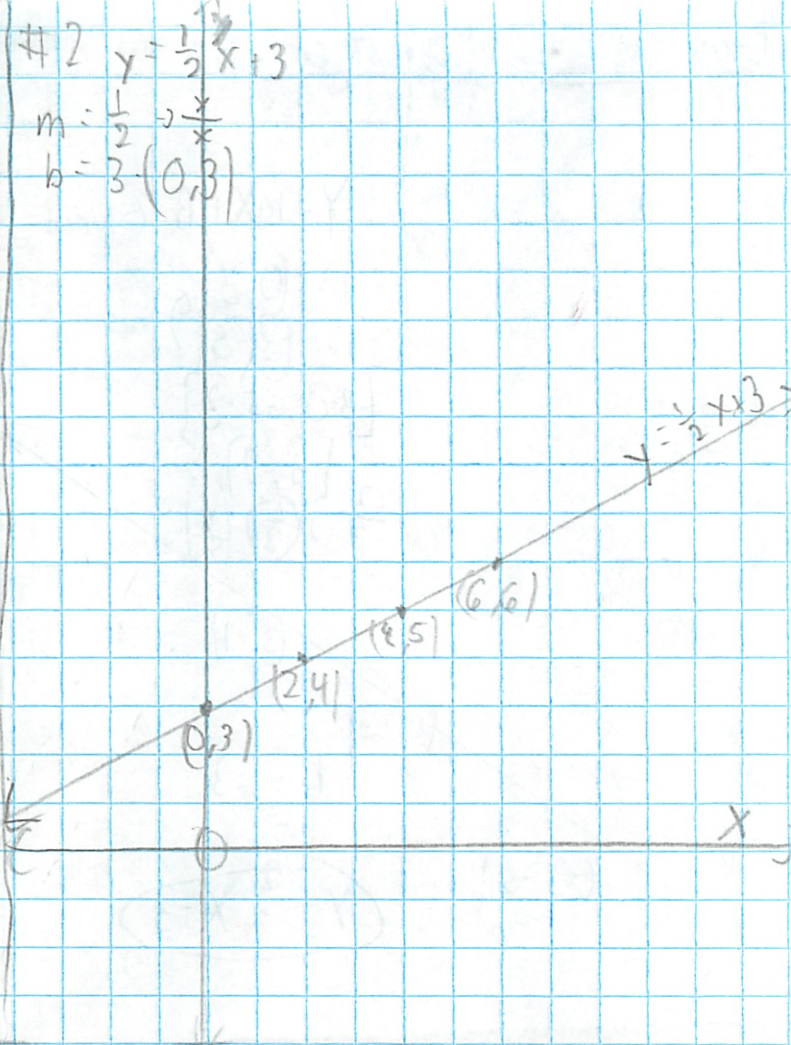
#10

Graphing Equations

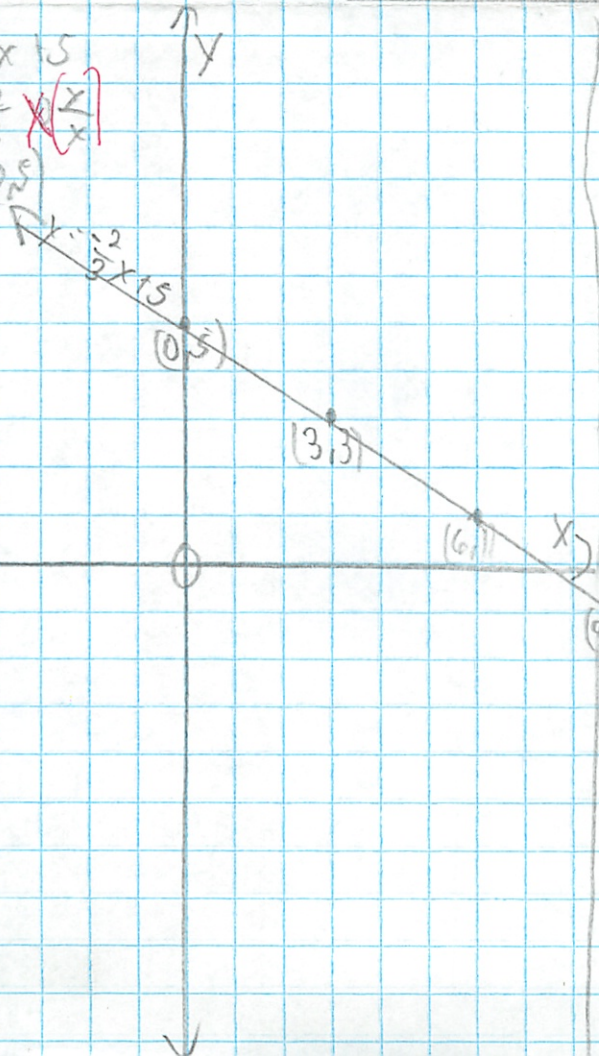
#1 $y = 3x - 5$
 $m = 3 \rightarrow \frac{3}{1} \rightarrow \frac{y}{x}$
 $b = -5 \rightarrow (0, -5)$



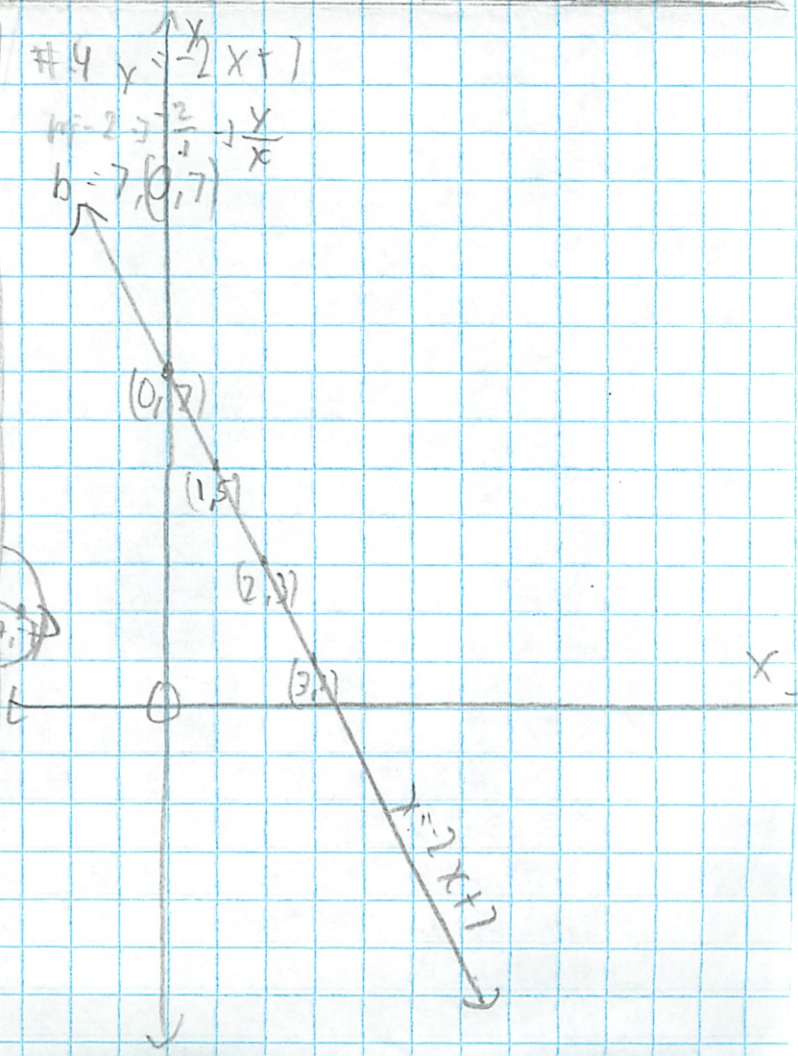
#2 $y = \frac{1}{2}x + 3$
 $m = \frac{1}{2} \rightarrow \frac{y}{x}$
 $b = 3 \rightarrow (0, 3)$



#3 $y = \frac{2}{3}x + 5$
 $m = \frac{2}{3} \rightarrow \frac{y}{x}$
 $b = 5 \rightarrow (0, 5)$



#4 $y = -\frac{2}{3}x + 7$
 $m = -\frac{2}{3} \rightarrow \frac{y}{x}$
 $b = 7 \rightarrow (0, 7)$



Finding an Equation

$$Y = mX + B \quad \leftarrow \text{Need}$$

$$m = \frac{(0, 3) - (-3, -5)}{3 - (-3)}$$

$$= \frac{3 - (-5)}{3 - (-3)}$$

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

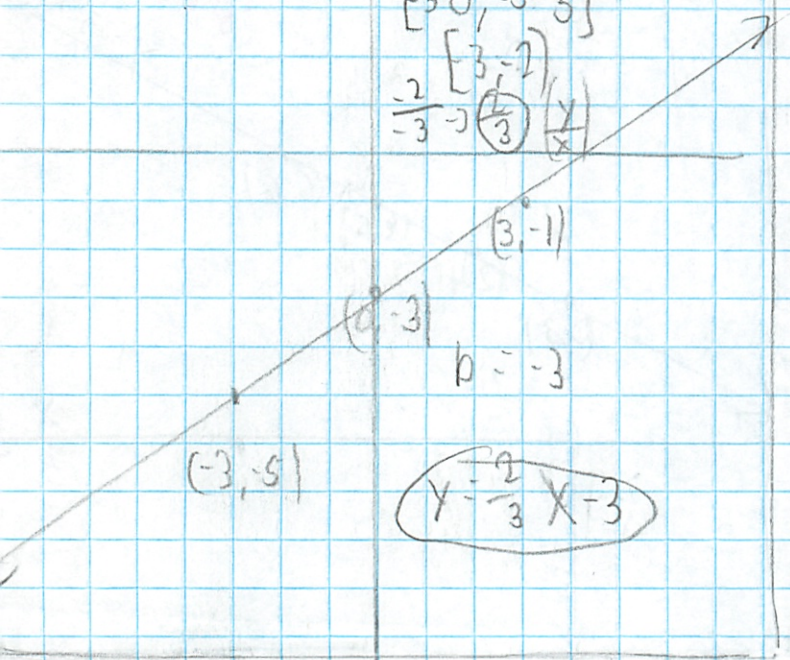
$$B = -3$$

$$Y = \frac{4}{3}X - 3$$

$$B = -3$$

$$(-3, -5)$$

$$Y = \frac{4}{3}X - 3$$



Michael Plummer

Reg:

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

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

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

Check:

$(6, -2)$ \leftarrow Can't be the y-intercept point

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

$$y = -2$$

$$x = 6$$

$$-2 = \frac{1}{2} \cdot 6 - 5$$

$$-2 = 3 - 5$$

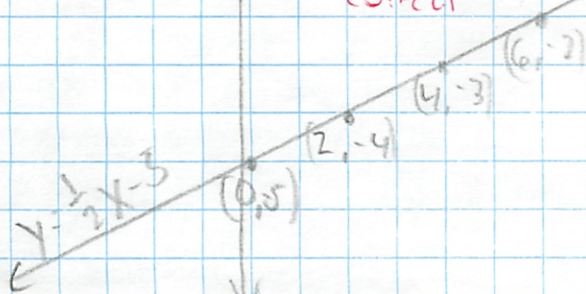
$$-2 = -2$$

The are

both the same,

So they are

correct



Checking for errors

#2

Reg:

$$y = -3x + 4$$

$$m = -3 \rightarrow \frac{-3}{1} \rightarrow \frac{-3}{1} \rightarrow \frac{-3}{1}$$

$$b = 4 \rightarrow (0, 4)$$

Check:

$$y = -3x + 4$$

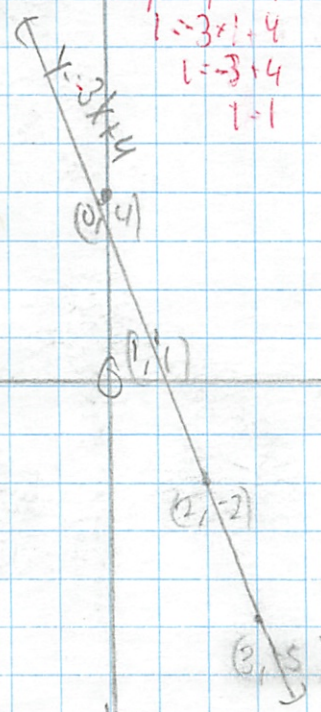
$$(1, 1)$$

$y = 1, x = 1$ \leftarrow Don't Need

$$1 = -3 \cdot 1 + 4$$

$$1 = -3 + 4$$

$$1 = 1$$



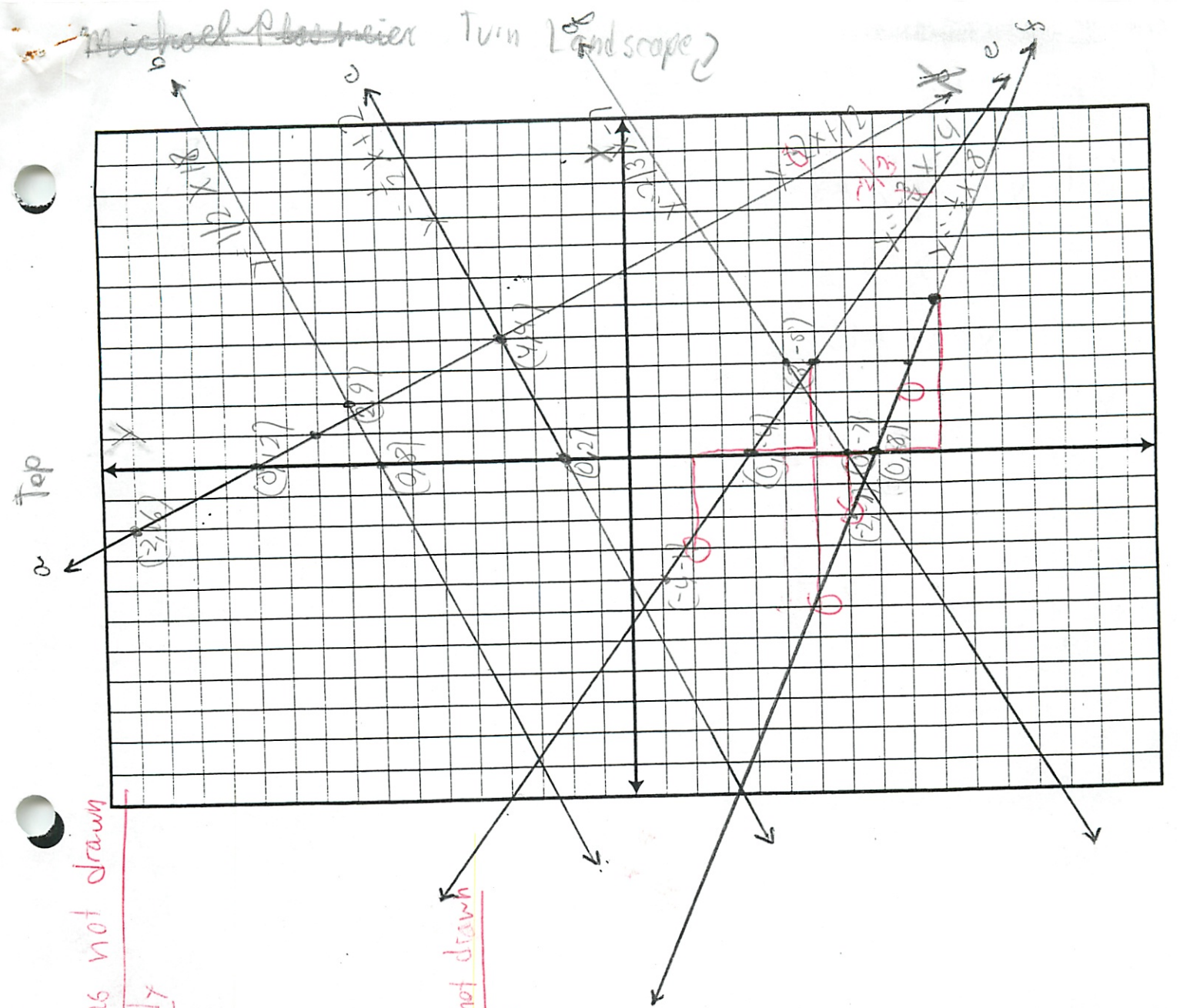
a: $y = mx + b$
 $m = \begin{pmatrix} -2,16 \\ 0,12 \end{pmatrix}$
 $\begin{bmatrix} -2,0, 6-12 \\ -2,14 \end{bmatrix}$
 $\frac{y}{x} \rightarrow \frac{-2}{1} = -2$
 $b = (0,12) \Rightarrow 12$
 $y = 2x + 12$

b: $y = mx + b$
 $m = \begin{pmatrix} 2,9 \\ 0,8 \end{pmatrix}$
 $\begin{bmatrix} 2,0, 8 \\ 2,1 \end{bmatrix}$
 $\frac{y}{x} = \frac{2}{1} = 2$
 $b = (0,8) \Rightarrow 8$
 $y = \frac{1}{2}x + 8$

c: $y = mx + b$
 $m = \begin{pmatrix} 4,4 \\ 0,7 \end{pmatrix}$
 $\begin{bmatrix} 4,0, 7 \\ 4,2 \end{bmatrix}$
 $\frac{y}{x} = \frac{4}{1} = 4$
 $b = (0,7) \Rightarrow 7$
 $y = \frac{1}{2}x + 7$

F was not drawn correctly

F was not drawn correctly



Graph and Check 1 ordered pair or point

$$1. y = -\frac{3}{4}x + 8$$

$$2. y = x - 5$$

$$3. y = 2x + 5$$

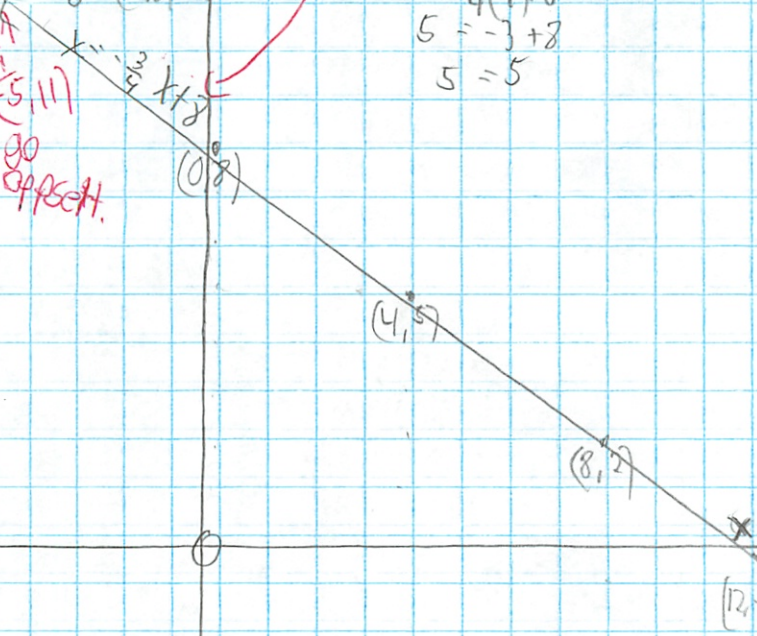
Michael Plasmeier

#1 $y = -\frac{3}{4}x + 8$

$m = -\frac{3}{4} \rightarrow \frac{y}{x}$
 $b = (0, 8) \rightarrow 8$

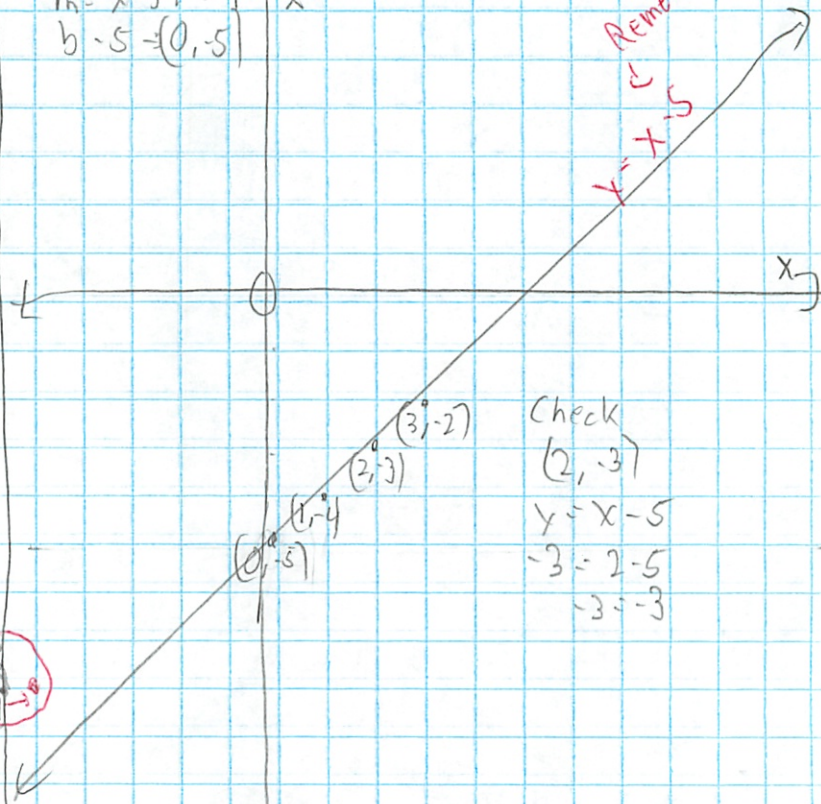
Remember

Check:
 $(4, 5)$
 $y = -\frac{3}{4}x + 8$
 $5 = -\frac{3}{4}(4) + 8$
 $5 = -3 + 8$
 $5 = 5$



#2 $y = x - 5$
 $m = x \rightarrow 1 \rightarrow \frac{y}{x}$
 $b = -5 \rightarrow (0, -5)$

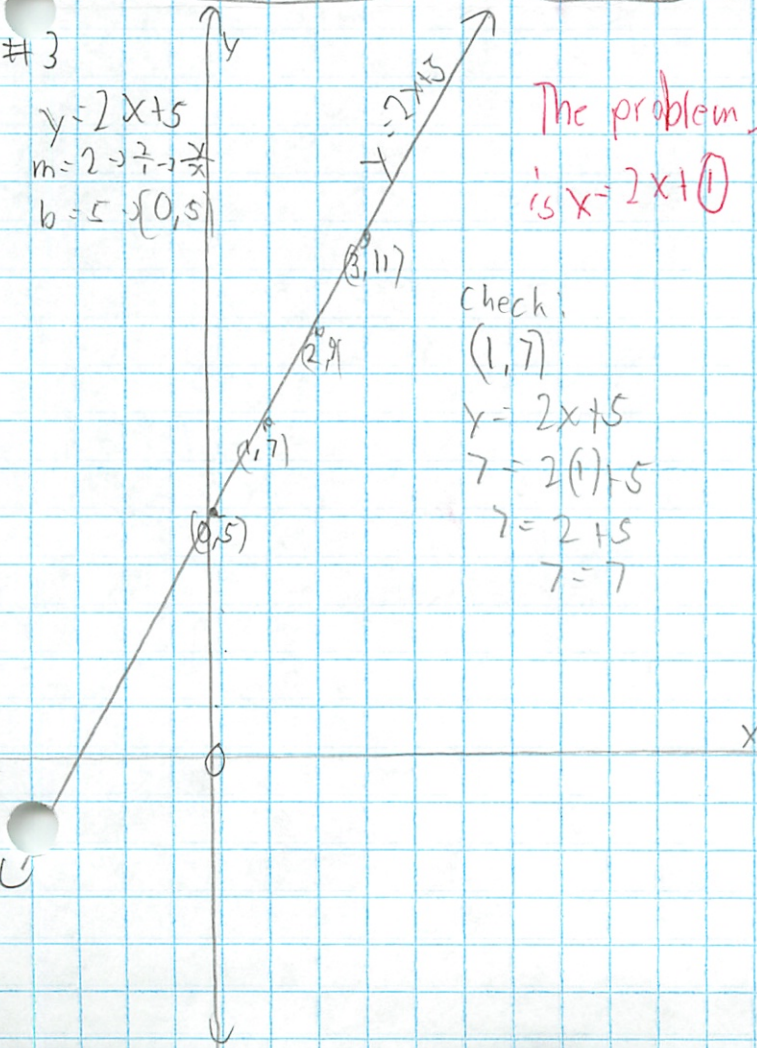
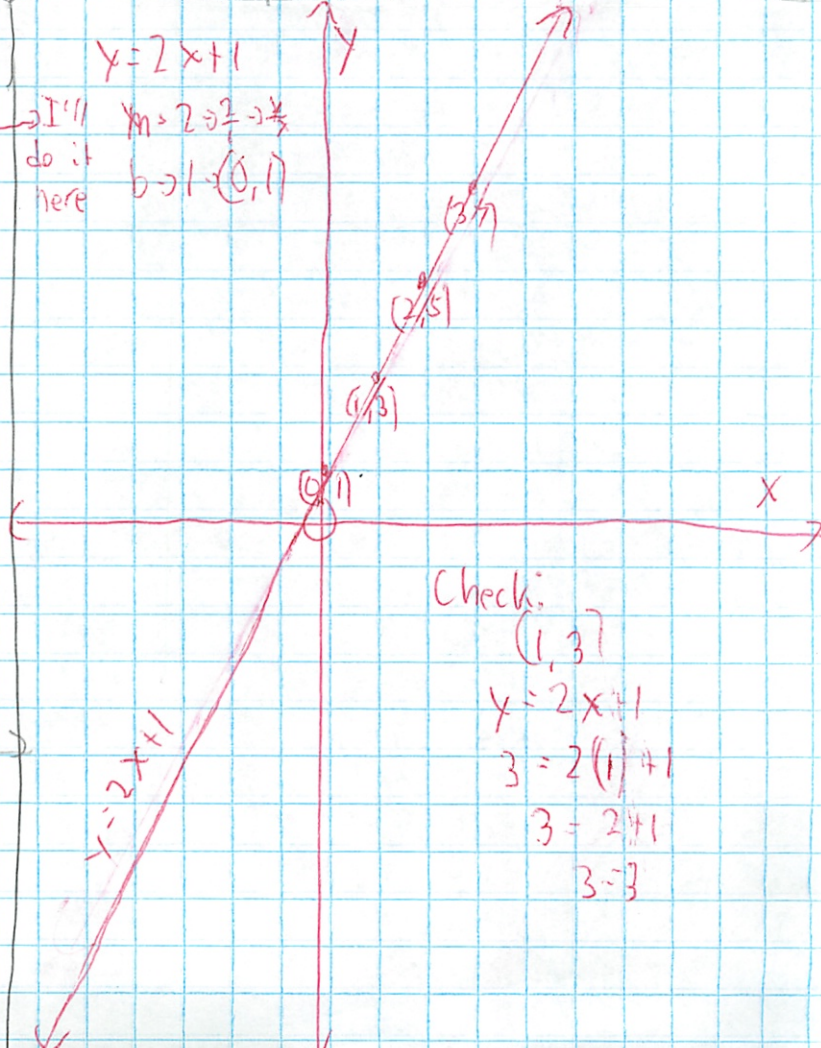
Remember



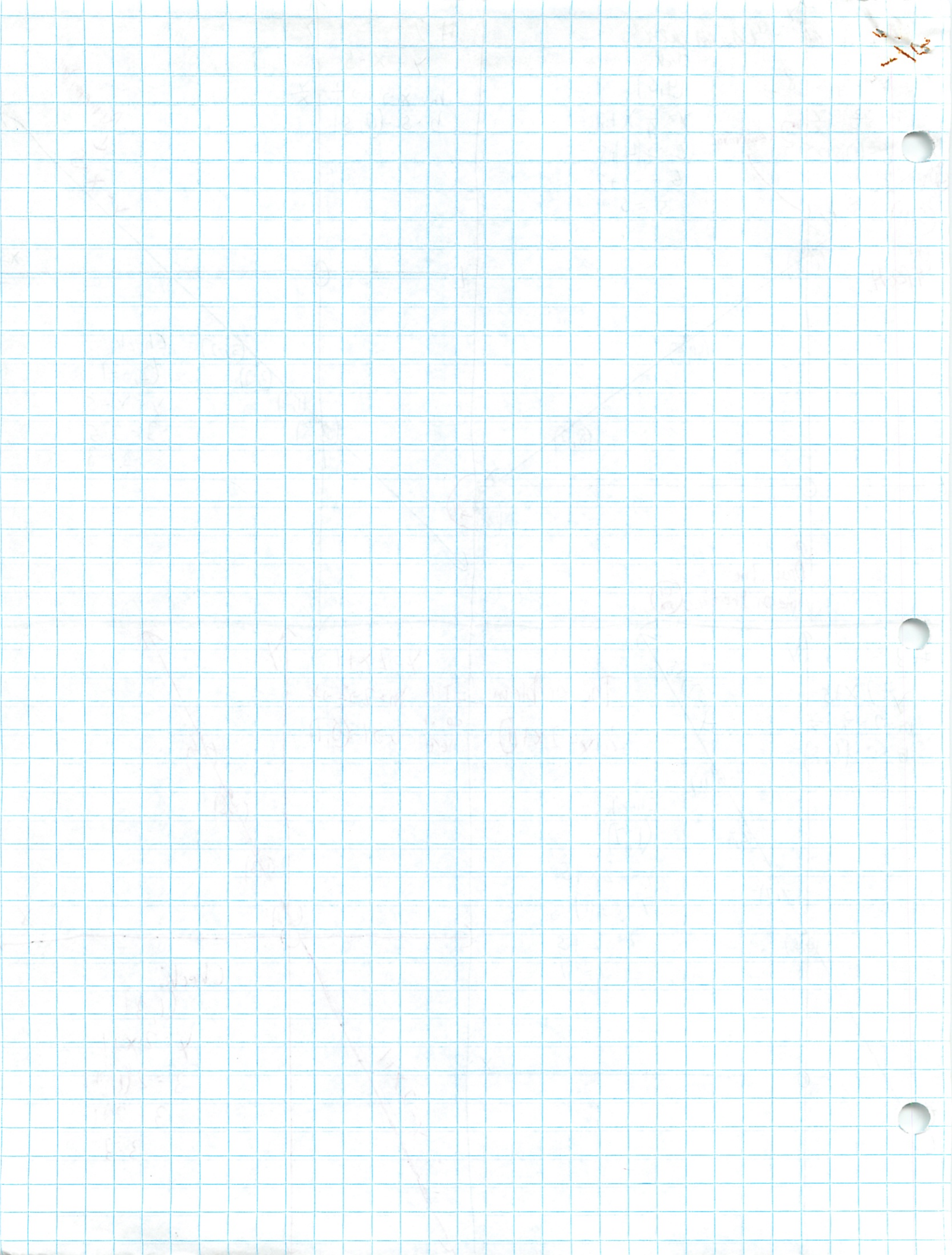
#3 $y = 2x + 5$
 $m = 2 \rightarrow \frac{y}{x}$
 $b = 5 \rightarrow (0, 5)$

The problem is $x = 2x + 1$

$y = 2x + 1$
 $m = 2 \rightarrow \frac{y}{x}$
 $b = 1 \rightarrow (0, 1)$

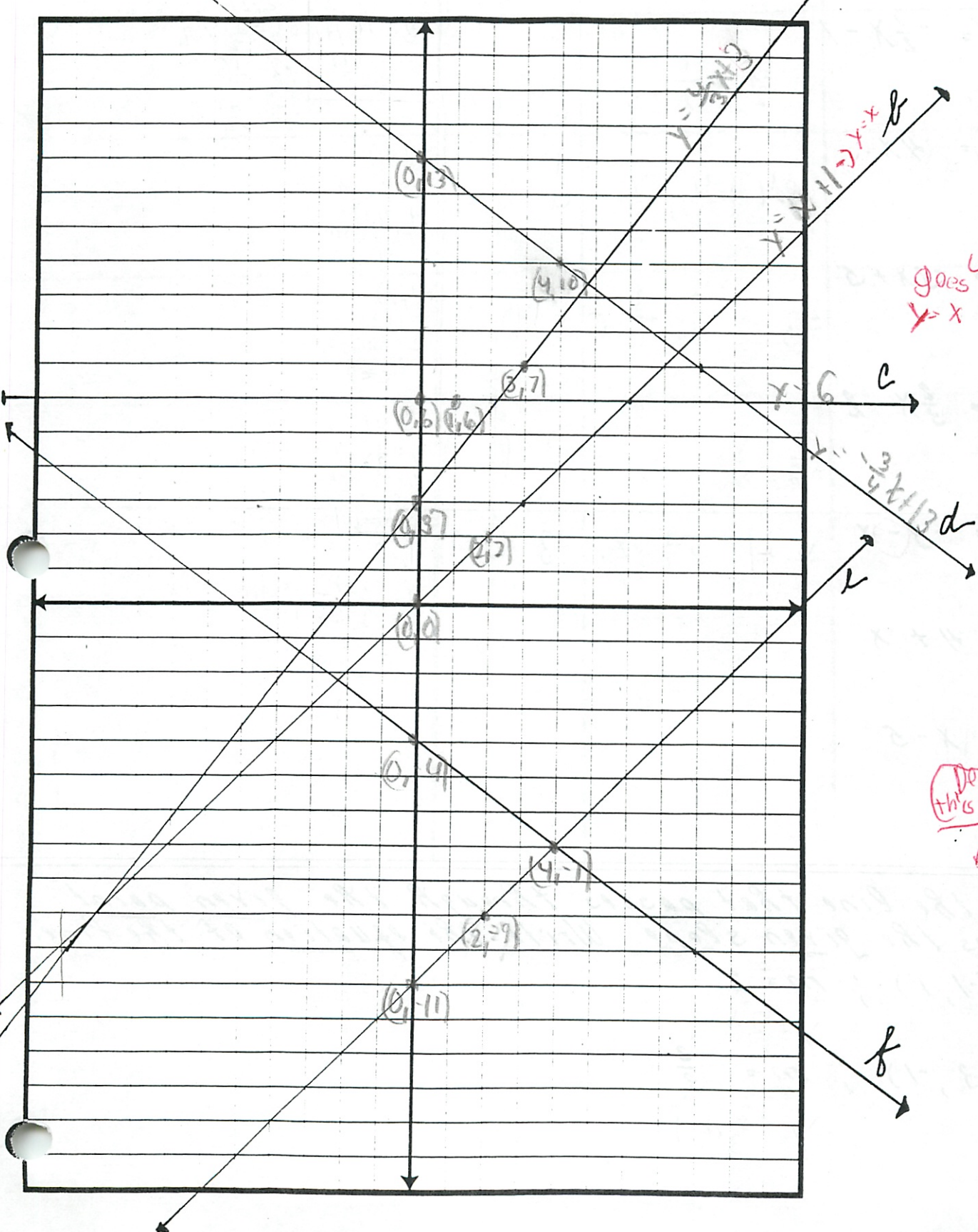


1/50



Review 1 → Equations of Lines

Write the Equation of each line.
 Use the slope (m) and y-intercept (b) to write each equation.



a
 $m = \frac{4}{3}$
 $b = 3$
 $y = \frac{4}{3}x + 3$

b
 $m = 1$
 $b = 0$
 $y = 1x + 0$

goes to
 $y = x$

c
 $m = 0$
 $b = 6$
 $y = 6 \times 16$

d
 $m = -\frac{3}{4}$
 $b = 13$
 $y = -\frac{3}{4}x + 13$

e
 $m = 1$
 $b = -11$
 $y = x - 11$

f
 $m = -\frac{3}{4}$
 $b = -4$
 $y = -\frac{3}{4}x - 4$

Do this

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

Not this

Graph each line using the slope (m) and y -intercept. Be sure to label 3 points and check one point.

1 $\rightarrow y = 2x + 1$	$m = 2 \rightarrow \frac{2}{1} \rightarrow \frac{y}{x}$	$b = 1 \rightarrow (0, 1)$	Check (,) $\rightarrow y = 2x + 1$ (1, 3) $y = 2x + 1$ $3 = 2(1) + 1$ $3 = 2 + 1$ $3 = 3$
2 $\rightarrow y = -\frac{1}{2}x - 1$	$-\frac{1}{2} \rightarrow \frac{-1}{2} \rightarrow \frac{y}{x}$	$-1 \rightarrow (0, -1)$	(2, -2) $y = -\frac{1}{2}x - 1$ $-2 = -\frac{1}{2}(2) - 1$ $-2 = -1 - 1$ $-2 = -2$
3 $\rightarrow y = 4x + 0$	$4 \rightarrow \frac{4}{1} \rightarrow \frac{y}{x}$	$0 \rightarrow (0, 0)$	(1, 4) $y = 4x + 0$ $4 = 4(1) + 0$ $4 = 4 + 0$ $4 = 4$
4 $\rightarrow y = -3x + 5$	$-3 \rightarrow \frac{-3}{1} \rightarrow \frac{y}{x}$	$5 \rightarrow (0, 5)$	(1, 2) $y = -3x + 5$ $2 = -3(1) + 5$ $2 = -3 + 5$ $2 = 2$
5 $\rightarrow y = \frac{2}{3}x - 2$	$\frac{2}{3} \rightarrow \frac{y}{x}$	$-2 \rightarrow (0, -2)$	(3, 0) $y = \frac{2}{3}x - 2$ $0 = \frac{2}{3}(3) - 2$ $0 = 2 - 2$ $0 = 0$
6 $\rightarrow y = -3 - x$	$x \rightarrow 1 \rightarrow \frac{-1}{1} \rightarrow \frac{y}{x}$	$-3 \rightarrow (0, -3)$	(1, -2) $y = -3 - x$ extra - ? $-2 = -3 - (1)$ $-2 = -3 - 1$ $-2 = -2$
7 $\rightarrow y = 4 + x$			
8 $\rightarrow y = x - 5$			

Graph the line that passes through the given point and has the given slope. Write the equation of the line.

- 9 $\rightarrow (-1, 1) ; m = 2$
 $y = 2x + 3$
- 10 $\rightarrow (3, -1) ; m = -\frac{2}{3}$
 $y = -\frac{2}{3}x + 1$

My Work

11/11

a: $Y = mx + b$

$m = \begin{pmatrix} 3, 7 \\ 0, 3 \end{pmatrix}$

$[3-0, 7-3]$

$[3, 4]$

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

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

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

d: $Y = mx + b$

$m = \begin{pmatrix} 4, 10 \\ 0, 13 \end{pmatrix}$

$[4-0, 10-13]$

$[4, -3]$

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

$b = (0, 13) \rightarrow 13$

$y = -\frac{3}{4}x + 13$

b: $Y = mx + b$

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

$[2-0, 2-0]$

$[2, 2]$

$\frac{y}{x} = \frac{2}{2} \rightarrow 1$

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

$y = 1x + 0 = x$

Do I need the +0?

e: $y = mx + b$

$m = \begin{pmatrix} 2, -9 \\ 0, -11 \end{pmatrix}$

$[2-0, -9-(-11)]$

$[2, 2]$

$\frac{y}{x} = \frac{2}{2} \rightarrow 1$

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

$y = x - 11$

c: $Y = mx + b$

$m = \begin{pmatrix} 1, 6 \\ 0, 6 \end{pmatrix}$

$[1-0, 6-6]$

$[1, 0]$

$\frac{y}{x} = \frac{0}{1} \rightarrow 0$

$b = (0, 6) \rightarrow 6$

$y = 0x + 6 \rightarrow y = 6$

Can you do this? yes

No

f: $y = mx + b$

$m = \begin{pmatrix} 4, -7 \\ 0, -4 \end{pmatrix}$

$[4-0, -7-(-4)]$

$[4, -3]$

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

$b = (0, -4) \rightarrow -4$

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

1/3/2014

$$\begin{aligned}
 & y = mx + b \\
 & m = \frac{y_2 - y_1}{x_2 - x_1} \\
 & (0, 3) \\
 & (1, 0, 1) \\
 & (2, 3) \\
 & \frac{3}{1} = \frac{3}{1} \\
 & m = 3 \\
 & y = 3x + b \\
 & 0 = 3(1) + b \\
 & 0 = 3 + b \\
 & -3 = b \\
 & y = 3x - 3
 \end{aligned}$$

$$\begin{aligned}
 & y = mx + b \\
 & m = \frac{y_2 - y_1}{x_2 - x_1} \\
 & (0, 3) \\
 & (1, 0, 1) \\
 & (2, 3) \\
 & \frac{3}{1} = \frac{3}{1} \\
 & m = 3 \\
 & y = 3x + b \\
 & 0 = 3(1) + b \\
 & 0 = 3 + b \\
 & -3 = b \\
 & y = 3x - 3
 \end{aligned}$$

$$\begin{aligned}
 & y = mx + b \\
 & m = \frac{y_2 - y_1}{x_2 - x_1} \\
 & (0, 3) \\
 & (1, 0, 1) \\
 & (2, 3) \\
 & \frac{3}{1} = \frac{3}{1} \\
 & m = 3 \\
 & y = 3x + b \\
 & 0 = 3(1) + b \\
 & 0 = 3 + b \\
 & -3 = b \\
 & y = 3x - 3
 \end{aligned}$$

$$\begin{aligned}
 & y = mx + b \\
 & m = \frac{y_2 - y_1}{x_2 - x_1} \\
 & (0, 3) \\
 & (1, 0, 1) \\
 & (2, 3) \\
 & \frac{3}{1} = \frac{3}{1} \\
 & m = 3 \\
 & y = 3x + b \\
 & 0 = 3(1) + b \\
 & 0 = 3 + b \\
 & -3 = b \\
 & y = 3x - 3
 \end{aligned}$$

$$\begin{aligned}
 & y = mx + b \\
 & m = \frac{y_2 - y_1}{x_2 - x_1} \\
 & (0, 3) \\
 & (1, 0, 1) \\
 & (2, 3) \\
 & \frac{3}{1} = \frac{3}{1} \\
 & m = 3 \\
 & y = 3x + b \\
 & 0 = 3(1) + b \\
 & 0 = 3 + b \\
 & -3 = b \\
 & y = 3x - 3
 \end{aligned}$$

$$\begin{aligned}
 & y = mx + b \\
 & m = \frac{y_2 - y_1}{x_2 - x_1} \\
 & (0, 3) \\
 & (1, 0, 1) \\
 & (2, 3) \\
 & \frac{3}{1} = \frac{3}{1} \\
 & m = 3 \\
 & y = 3x + b \\
 & 0 = 3(1) + b \\
 & 0 = 3 + b \\
 & -3 = b \\
 & y = 3x - 3
 \end{aligned}$$

#1

y

$$y = 2x + 1$$

(0, 1)

(1, 3)

(2, 5)

(3, 7)

x

#2

y

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

(0, -1)

(2, -2)

(4, -3)

(6, -4)

x

#3

y

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

(3, 4)

(2, 8)

(1, 4)

(0, 0)

x

#5

y

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

(3, 4)

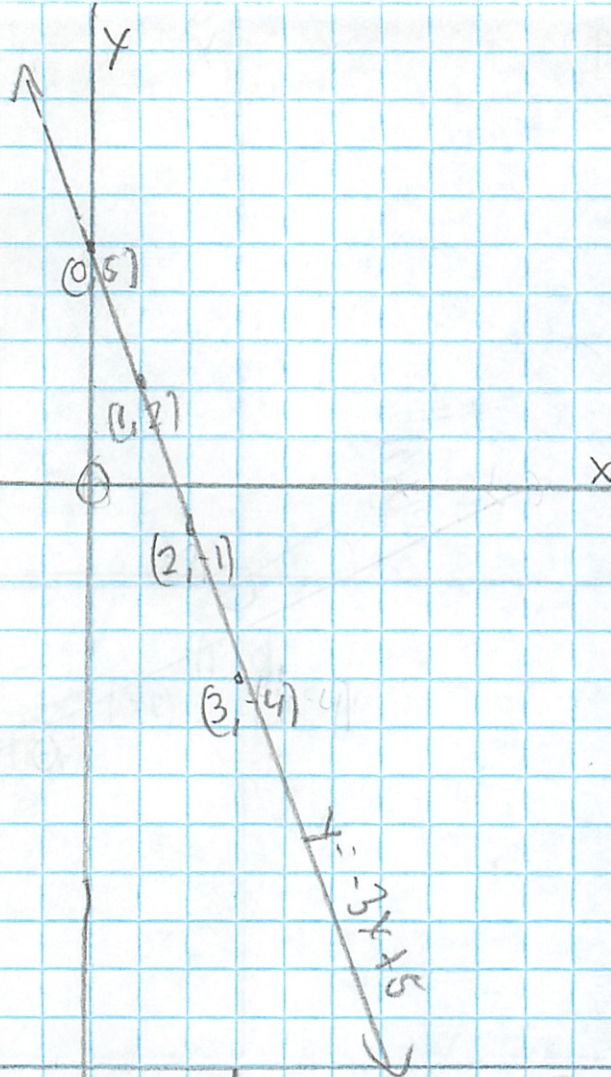
(6, 2)

(3, 0)

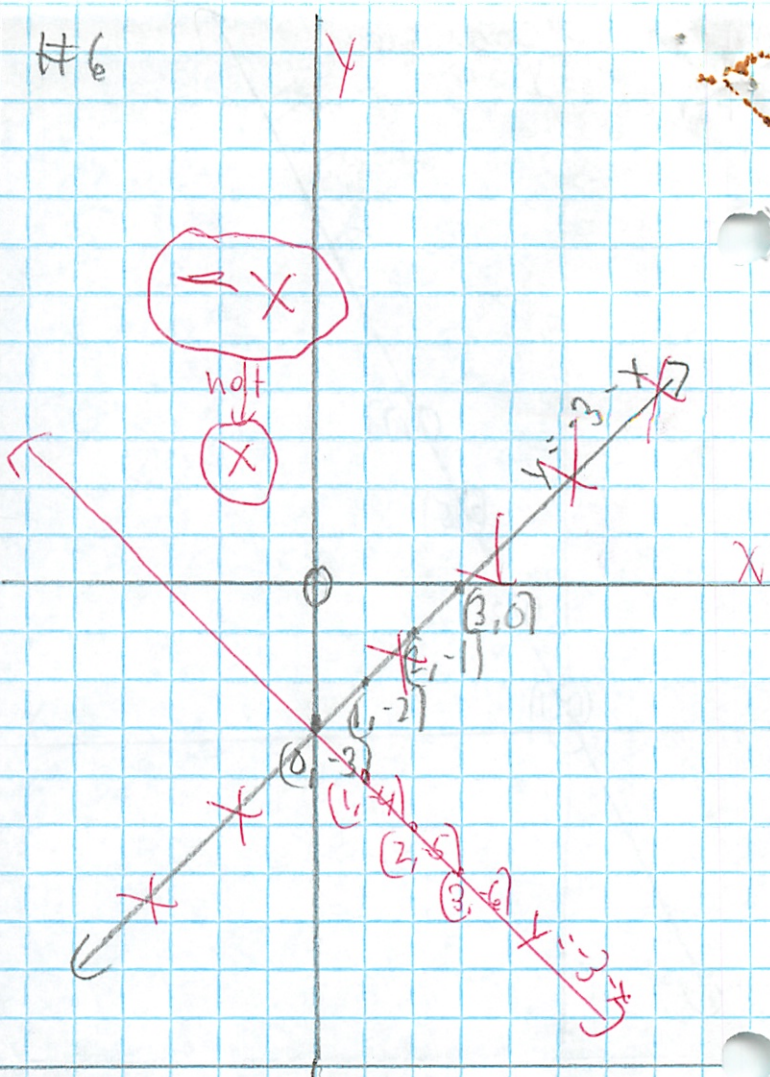
(0, -2)

x

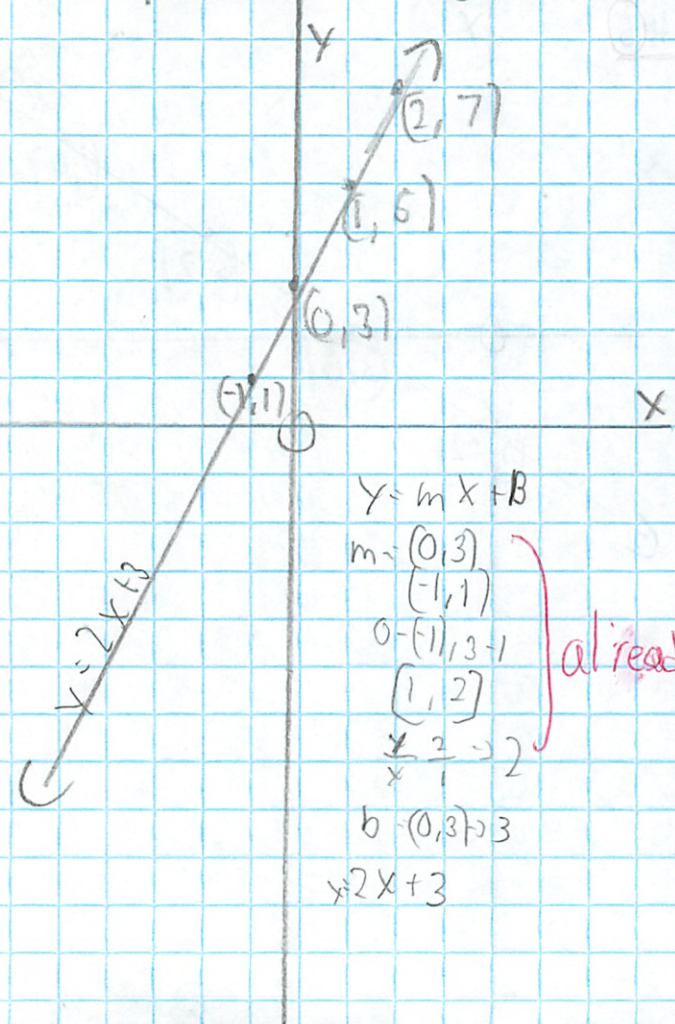
#4



#6



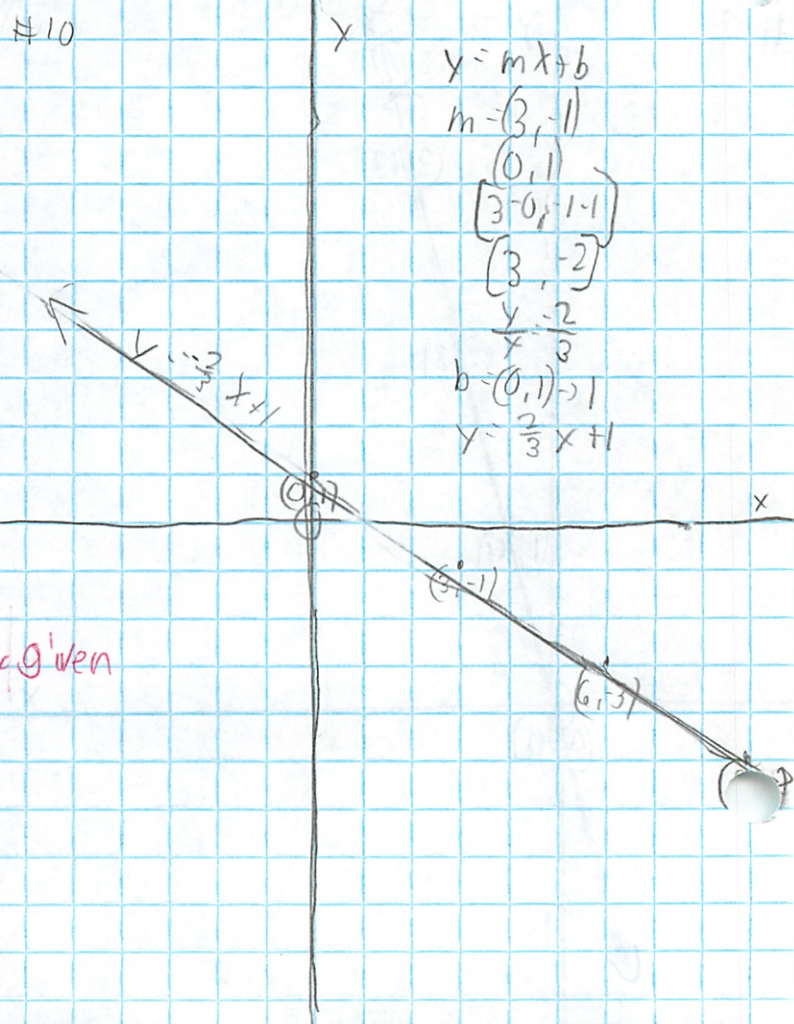
#9



$y = mx + b$
 $m = \frac{(0,3) - (-1,1)}{0 - (-1)}$
 $m = \frac{2}{1} = 2$
 $b = (0,3) \rightarrow 3$
 $y = 2x + 3$

already given

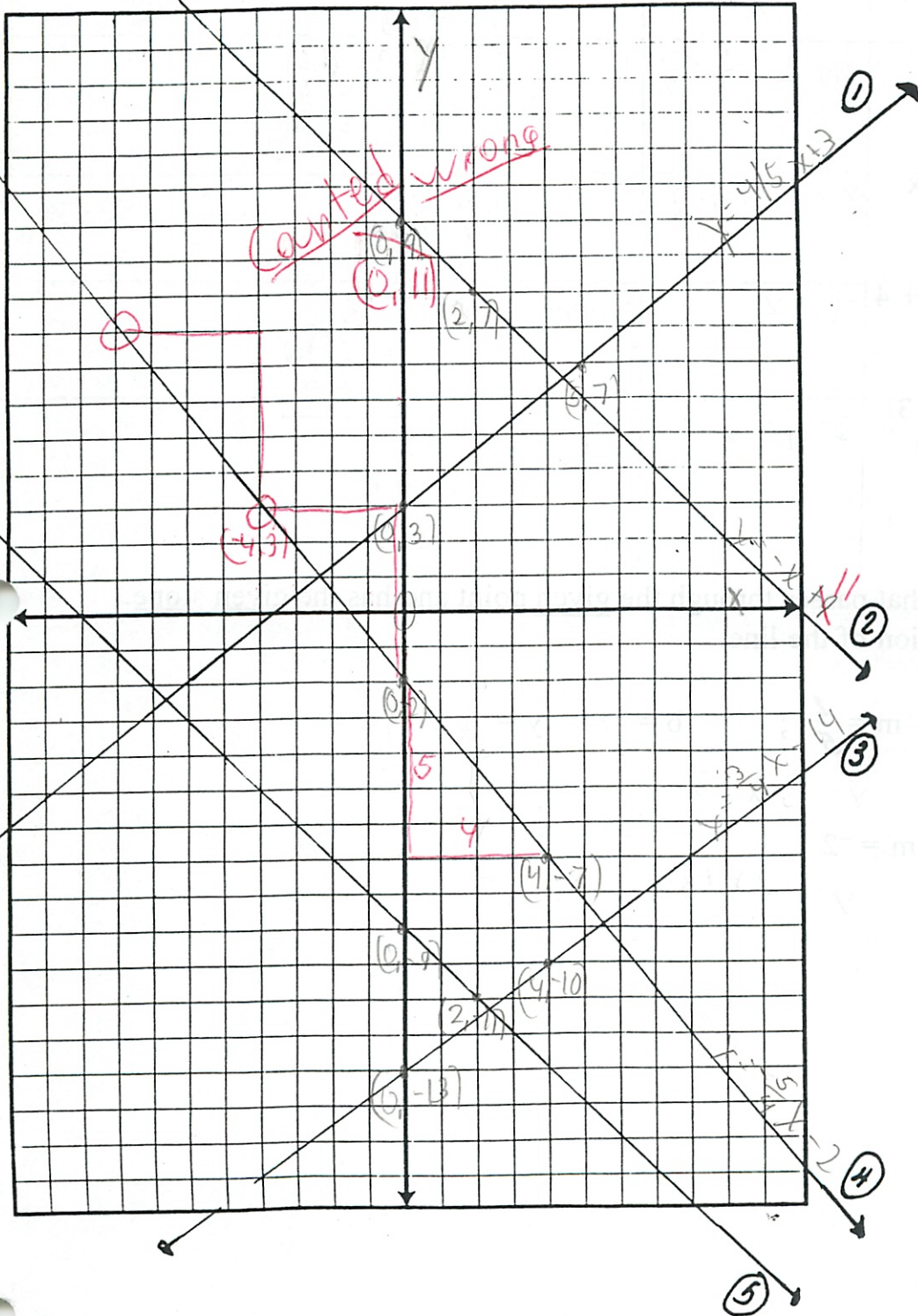
#10



$y = mx + b$
 $m = \frac{(3,4) - (0,1)}{3 - 0}$
 $m = \frac{3}{3} = 1$
 $b = (0,1) \rightarrow 1$
 $y = x + 1$

Review II -- Equations of Lines

A. Write the equation of each line. Use the slope (m) and y-intercept (b) to write each equation.



1 $m = 4/5$
 $b = 11$
 $y = \frac{4}{5}x + 11$

2 $m = -1$
 $b = 9$
 $y = -x + 9$

3 $m = \frac{3}{4}$
 $b = -13$
 $y = \frac{3}{4}x - 13$

4 $m = -\frac{5}{4}$
 $b = -2$
 $y = -\frac{5}{4}x - 2$

5 $m = -1$
 $b = -9$
 $y = -x - 9$

B. Graph each line using the slope (m) and y-intercept (b). Be sure to LABEL three (3) points and CHECK one of the three points.

	Need $y = mx + b$	Check
1) $y = \frac{2}{3}x - 3$	$m = \frac{2}{3} \rightarrow \frac{y}{x}$	$b = -3 \rightarrow (0, -3)$ $(6, 1)$ $y = \frac{2}{3}x - 3$ $1 = \frac{2}{3}(6) - 3$ $1 = 4 - 3$ $1 = 1$
2) $y = 5x + 0$	$m = 5 \rightarrow \frac{5}{1} \rightarrow \frac{y}{x}$	$b = 0 \rightarrow (0, 0)$ $(1, 5)$ $y = 5x$ $5 = 5(1)$ $5 = 5$
3) $y = -3 - x$	$x \rightarrow -1 \rightarrow \frac{-1}{1} \rightarrow \frac{y}{x}$	$b = -3 \rightarrow (0, -3)$ $(1, -4)$ $y = -3 - x$ $-4 = -3 - 1$ $-4 = -4$
4) $y = -\frac{1}{2}x + 4$	$\frac{-1}{2} \rightarrow \frac{y}{x}$	$b = 4 \rightarrow (0, 4)$ $(2, 3)$ $y = -\frac{1}{2}x + 4$ $3 = -\frac{1}{2}(2) + 4$ $3 = -1 + 4$ $3 = 3$
5) $y = 2x + 3$	$2 \rightarrow \frac{2}{1} \rightarrow \frac{y}{x}$	$b = 3 \rightarrow (0, 3)$ $(1, 5)$ $y = 2x + 3$ $5 = 2(1) + 3$ $5 = 2 + 3$ $5 = 5$

C. Graph the line that passes through the given point and has the given slope. Write the equation of the line.

1) $(-5, 5)$; $m = \frac{2}{5}$; $b = -3$; $y = \frac{2}{5}x - 3$
 $y = \frac{2}{5}x - 3$

2) $(-1, 5)$; $m = -2$
 $y = -2x + 3$

1. $y = mx + b$

$m = (5, 7)$

$(0, 3)$

$[5 - 0, 7 - 3]$

$[5, 4]$

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

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

$y = \frac{4}{5}x + 3$

2. $y = mx + b$

$m = (2, 7)$

$(0, 9)$

$[2 - 0, 7 - 9]$

$[2, -2]$

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

$b = (0, 9) \rightarrow 9$

$y = -1x + 9 \rightarrow y = -x + 9$

3. $y = m$ ~~x~~ $+ b$

$m = (4, -10)$

$(0, -13)$

$[4 - 0, -10 - (-13)]$

$[4, 3]$

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

$b = (0, -13) \rightarrow -13$

$y = \frac{3}{4}x - 13$

4. $y = mx + b$

$m = (4, -7)$

$(0, -2)$

$[4 - 0, -7 - (-2)]$

$[4, -5]$

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

$b = (0, -2) \rightarrow -2$

$y = -\frac{5}{4}x - 2$

5. $y = mx + b$

$m = (2, -11)$

$(0, -9)$

$[2 - 0, -11 - (-9)]$

$[2, -2]$

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

$b = (0, -9) \rightarrow -9$

$y = -1x - 9 \rightarrow y = -x - 9$

Is degrees - fire breaks

- direction pairs

- compass direction on the

fast? **Nope**

$$\begin{aligned}
 & \text{Matrix } P \\
 & P^{-1} = \frac{1}{|P|} \text{adj}(P) \\
 & |P| = \begin{vmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 3 & 4 & 5 \end{vmatrix} \\
 & = 1(15-12) - 2(10-12) + 3(10-9) \\
 & = 3 + 4 + 3 = 10 \\
 & \text{adj}(P) = \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix} \\
 & P^{-1} = \frac{1}{10} \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix}
 \end{aligned}$$

$$\begin{aligned}
 & \text{Matrix } Q \\
 & Q^{-1} = \frac{1}{|Q|} \text{adj}(Q) \\
 & |Q| = \begin{vmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 3 & 4 & 5 \end{vmatrix} \\
 & = 10 \\
 & \text{adj}(Q) = \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix} \\
 & Q^{-1} = \frac{1}{10} \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix}
 \end{aligned}$$

$$\begin{aligned}
 & \text{Matrix } R \\
 & R^{-1} = \frac{1}{|R|} \text{adj}(R) \\
 & |R| = \begin{vmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 3 & 4 & 5 \end{vmatrix} \\
 & = 10 \\
 & \text{adj}(R) = \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix} \\
 & R^{-1} = \frac{1}{10} \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix}
 \end{aligned}$$

$$\begin{aligned}
 & \text{Matrix } S \\
 & S^{-1} = \frac{1}{|S|} \text{adj}(S) \\
 & |S| = \begin{vmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 3 & 4 & 5 \end{vmatrix} \\
 & = 10 \\
 & \text{adj}(S) = \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix} \\
 & S^{-1} = \frac{1}{10} \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix}
 \end{aligned}$$

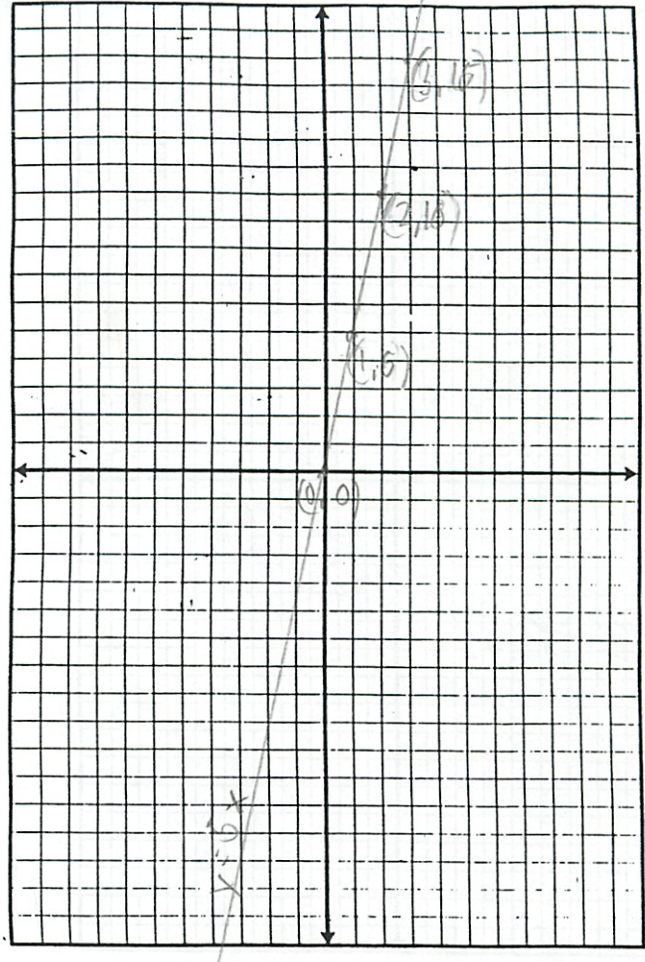
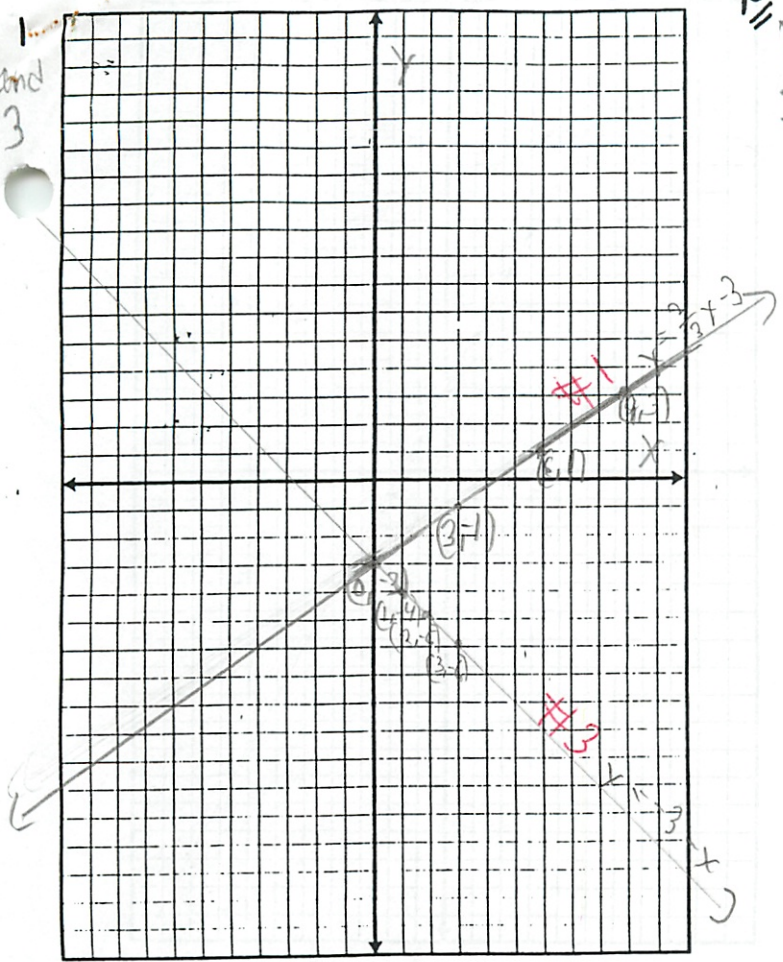
$$\begin{aligned}
 & \text{Matrix } T \\
 & T^{-1} = \frac{1}{|T|} \text{adj}(T) \\
 & |T| = \begin{vmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 3 & 4 & 5 \end{vmatrix} \\
 & = 10 \\
 & \text{adj}(T) = \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix} \\
 & T^{-1} = \frac{1}{10} \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix}
 \end{aligned}$$

$$\begin{aligned}
 & \text{Matrix } U \\
 & U^{-1} = \frac{1}{|U|} \text{adj}(U) \\
 & |U| = \begin{vmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 3 & 4 & 5 \end{vmatrix} \\
 & = 10 \\
 & \text{adj}(U) = \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix} \\
 & U^{-1} = \frac{1}{10} \begin{bmatrix} 11 & -7 & 2 \\ -5 & 2 & -1 \\ 2 & -1 & 1 \end{bmatrix}
 \end{aligned}$$

The degree of the polynomial is 3.
 The roots are α, β, γ .
 The sum of the roots is $\alpha + \beta + \gamma = -\frac{b}{a} = -\frac{6}{1} = -6$.
 The product of the roots is $\alpha\beta\gamma = -\frac{d}{a} = -\frac{-12}{1} = 12$.
 The sum of the squares of the roots is $\alpha^2 + \beta^2 + \gamma^2 = (\alpha + \beta + \gamma)^2 - 2(\alpha\beta + \beta\gamma + \gamma\alpha) = (-6)^2 - 2(-12) = 36 + 24 = 60$.

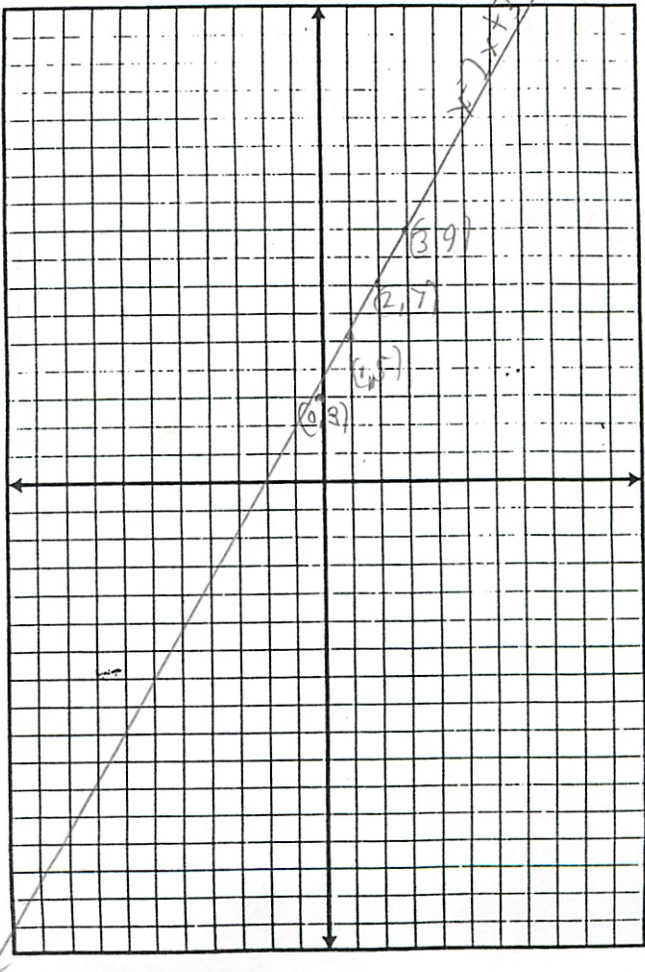
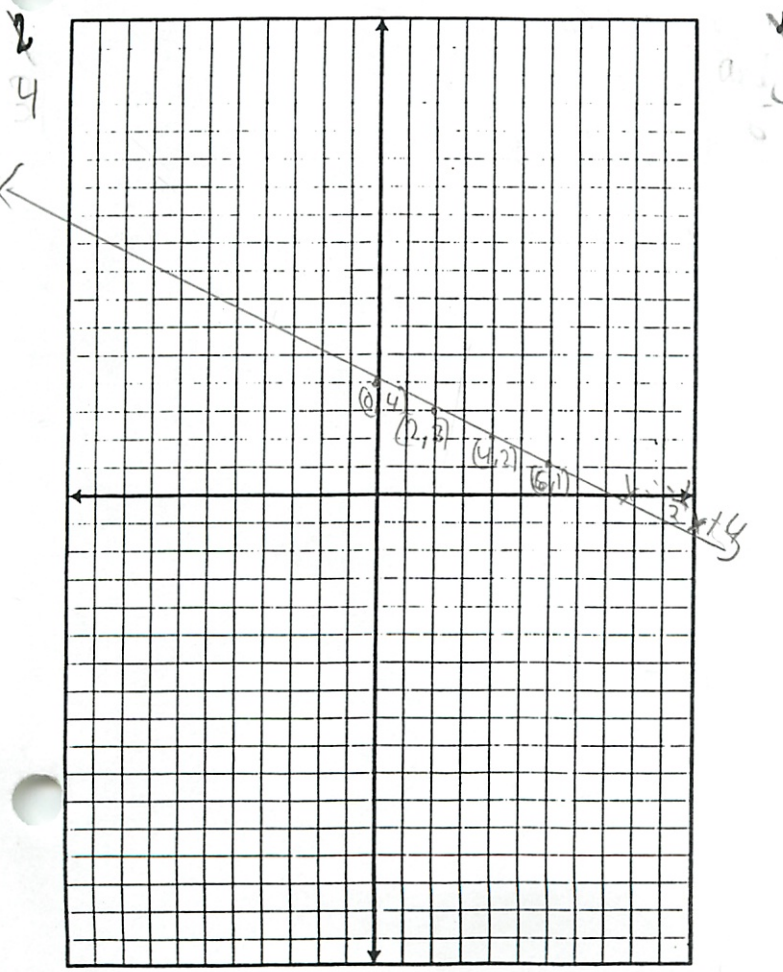
1
and
3

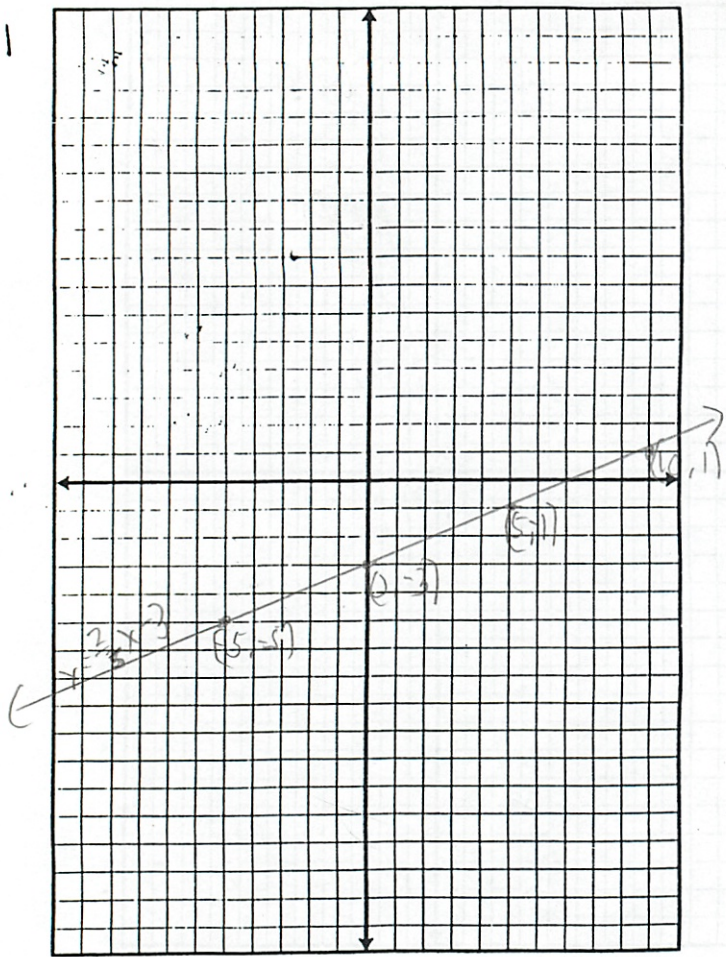
b) 3
2



2
4

c) 4





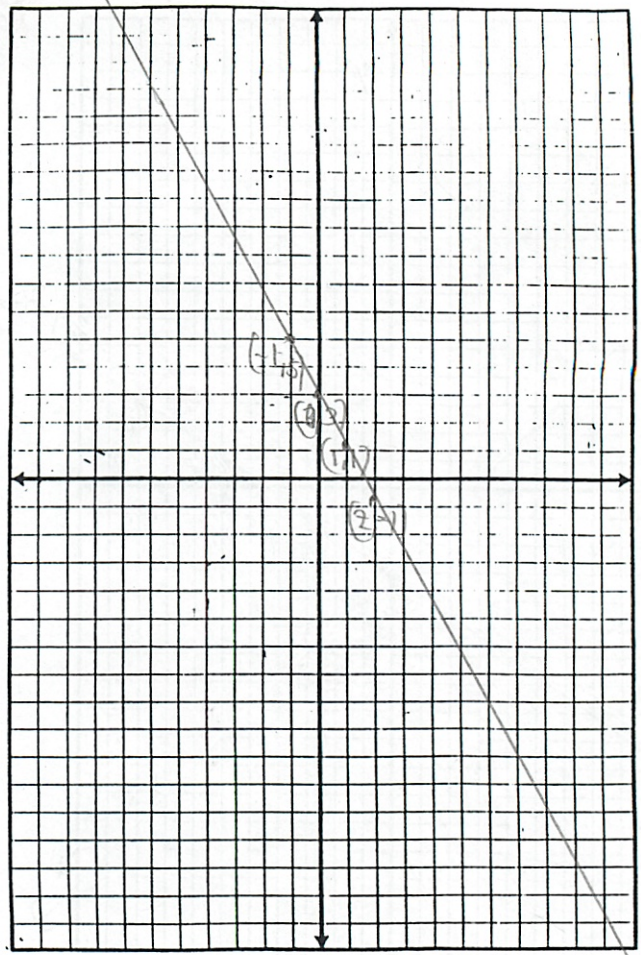
$$y = mx + b$$

$$m = \frac{2}{5}$$

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

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

2



$$y = mx + b$$

$$m = -2$$

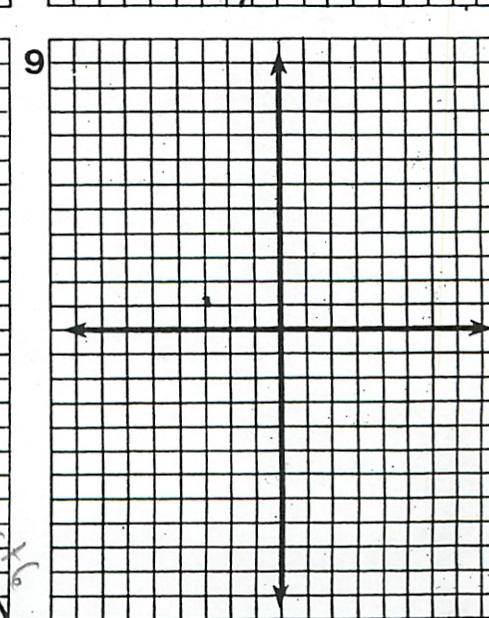
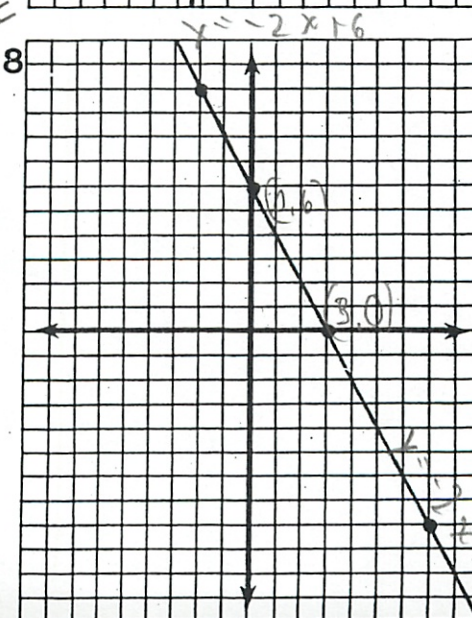
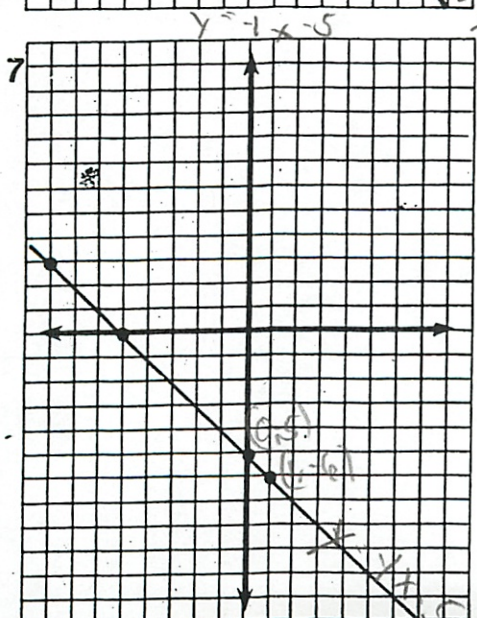
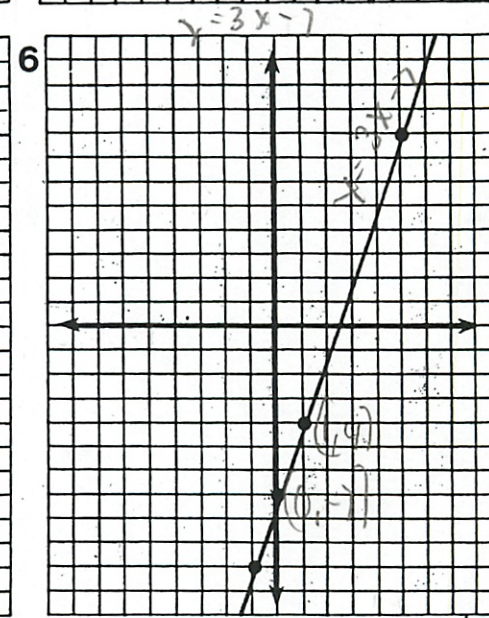
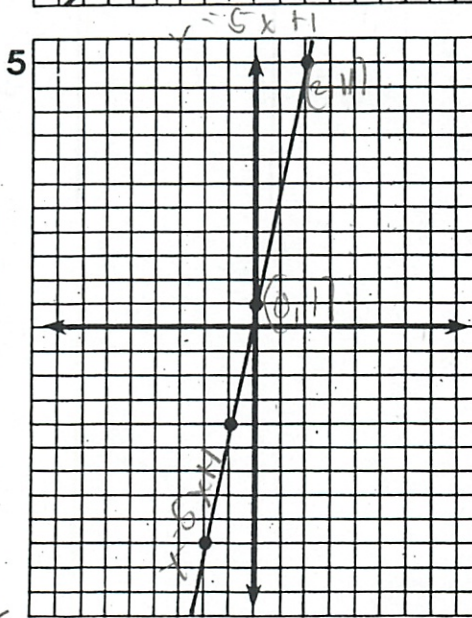
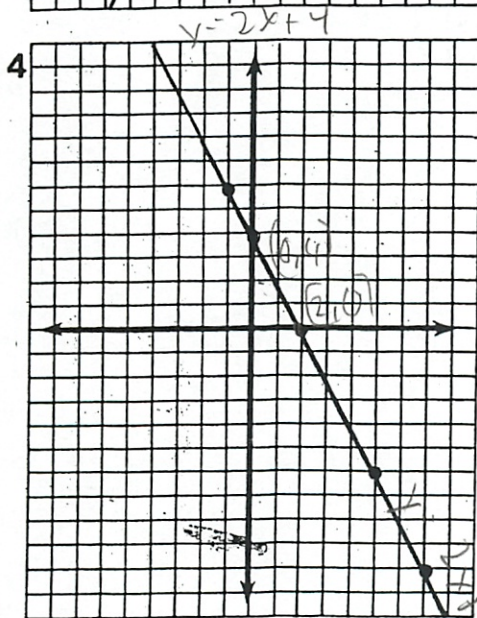
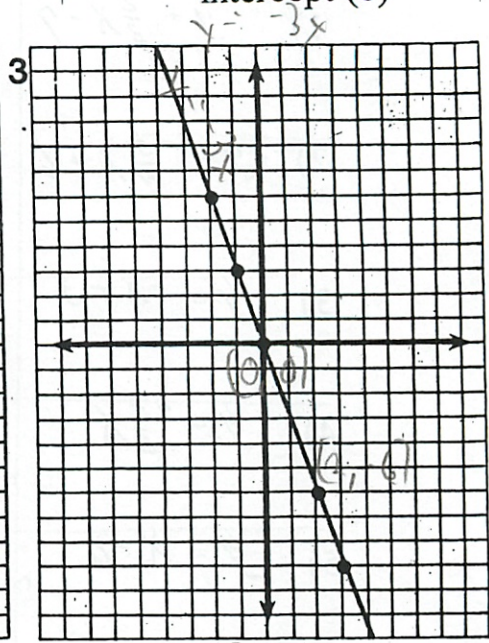
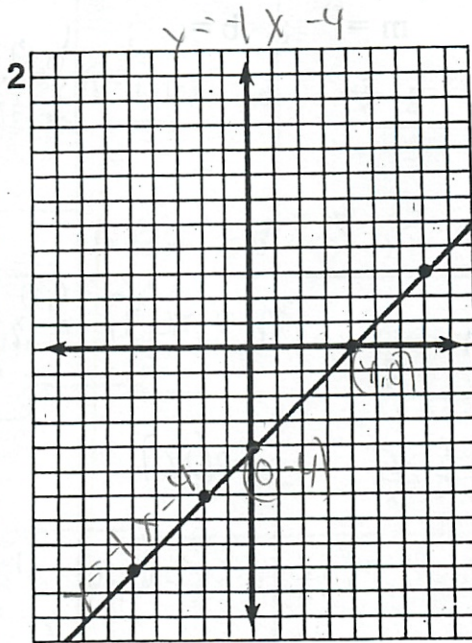
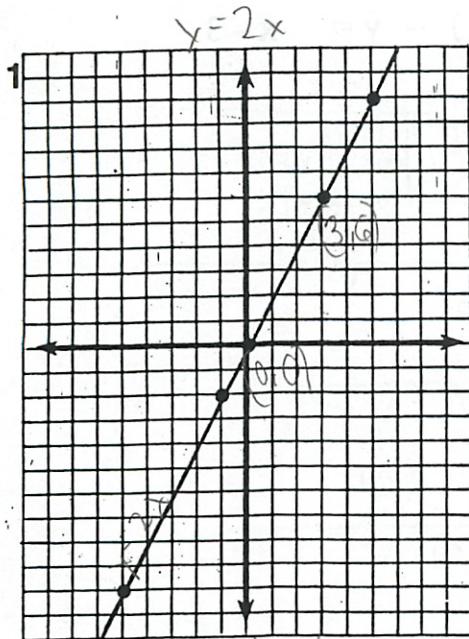
$$b = (0, 3) \rightarrow 3$$

$$y = -2x + 3$$

$y = -2x + 3$

Review III -- GRAPHING EQUATIONS

Part I --- Write the equation of each line. Be sure to give the slope (m) and the y-intercept (b)



B. Graph each line using the slope (m) and y-intercept (b). Be sure to LABEL three (3) points and CHECK one of the three points.

1) $y = \frac{2}{3}x - 7$	$m = \frac{2}{3}$; $b = -7$; $m = \frac{2}{3} \frac{y}{x}$	$b = -7 \rightarrow (0, -7)$	check $(3, -5) \rightarrow y = x - 3$ $y = \frac{2}{3}x - 7$ $-5 = \frac{2}{3}(3) - 7$ $-5 = 2 - 7$ $-5 = -5$
2) $y = -\frac{3}{4}x + 6$	$m = -\frac{3}{4}$; $b = 6$; $m = -\frac{3}{4} \frac{y}{x}$	$b = 6 \rightarrow (0, 6)$	$(4, 3)$ $y = -\frac{3}{4}x + 6$ $3 = -\frac{3}{4}(4) + 6$ $3 = -3 + 6$ $3 = 3$
3) $y = -x + 3$	$m = -1$; $b = 3$; $m = -x \rightarrow -1 \rightarrow \frac{1}{x}$	$b = 3 \rightarrow (0, 3)$	$(1, 2)$ $y = -x + 3$ $2 = -1(1) + 3$ $2 = -1 + 3$ $2 = 2$
4) $y = -\frac{3}{2}x$	$m = -\frac{3}{2}$; $b = 0$; $m = -\frac{3}{2} \frac{y}{x}$	$b = 0 \rightarrow (0, 0)$	$(0, -3)$ $y = -\frac{3}{2}x$ $-3 = -\frac{3}{2}(2)$ $-3 = -3$
5) $y = x - 6$	$m = 1$; $b = -6$; $m = x \rightarrow 1 \rightarrow \frac{1}{x}$	$b = -6 \rightarrow (0, -6)$	$(1, -5)$ $y = x - 6$ $-5 = 1 - 6$ $-5 = 1 - 6$ $-5 = -5$

$$\begin{aligned}
 1. \quad y &= mx + b \\
 m &= (3, 6) \\
 & (0, 0) \\
 & [3 - 0, 6 - 0] \\
 & [3, 6] \\
 \frac{y}{x} &= \frac{6}{3} \rightarrow \frac{2}{1} \rightarrow 2 \\
 b &= (0, 0) \rightarrow 0 \\
 y &= 2x + 0 \rightarrow y = 2x
 \end{aligned}$$

$$\begin{aligned}
 4. \quad y &= mx + b \\
 m &= (2, 0) \\
 & (0, 4) \\
 & [2 - 0, 0 - 4] \\
 & [2, -4] \\
 \frac{y}{x} &= \frac{-4}{2} \rightarrow -\frac{4}{2} \rightarrow -\frac{2}{1} \rightarrow -2 \\
 b &= (0, 4) \rightarrow 4 \\
 y &= -2x + 4
 \end{aligned}$$

$$\begin{aligned}
 2. \quad y &= mx + b \\
 m &= (4, 0) \\
 & (0, 4) \\
 & [4 - 0, 0 - 4] \\
 & [4, -4] \\
 \frac{y}{x} &= \frac{-4}{4} \rightarrow -\frac{4}{4} \rightarrow -1 \rightarrow -1 \\
 b &= (0, -4) \rightarrow -4 \\
 y &= -1x - 4
 \end{aligned}$$

$$\begin{aligned}
 5. \quad y &= mx + b \\
 m &= (2, 11) \\
 & (0, 1) \\
 & [2 - 0, 11 - 1] \\
 & [2, 10] \\
 \frac{y}{x} &= \frac{10}{2} \rightarrow \frac{5}{1} \rightarrow 5 \\
 b &= (0, 1) \rightarrow 1 \\
 y &= 5x + 1
 \end{aligned}$$

$$\begin{aligned}
 3. \quad y &= mx + b \\
 m &= (2, -6) \\
 & (0, 0) \\
 & [2 - 0, -6 - 0] \\
 & [2, -6] \\
 \frac{y}{x} &= \frac{-6}{2} \rightarrow -\frac{3}{1} \rightarrow -3 \rightarrow -3 \\
 b &= (0, 0) \rightarrow 0 \\
 y &= -3x + 0 \rightarrow y = -3x
 \end{aligned}$$

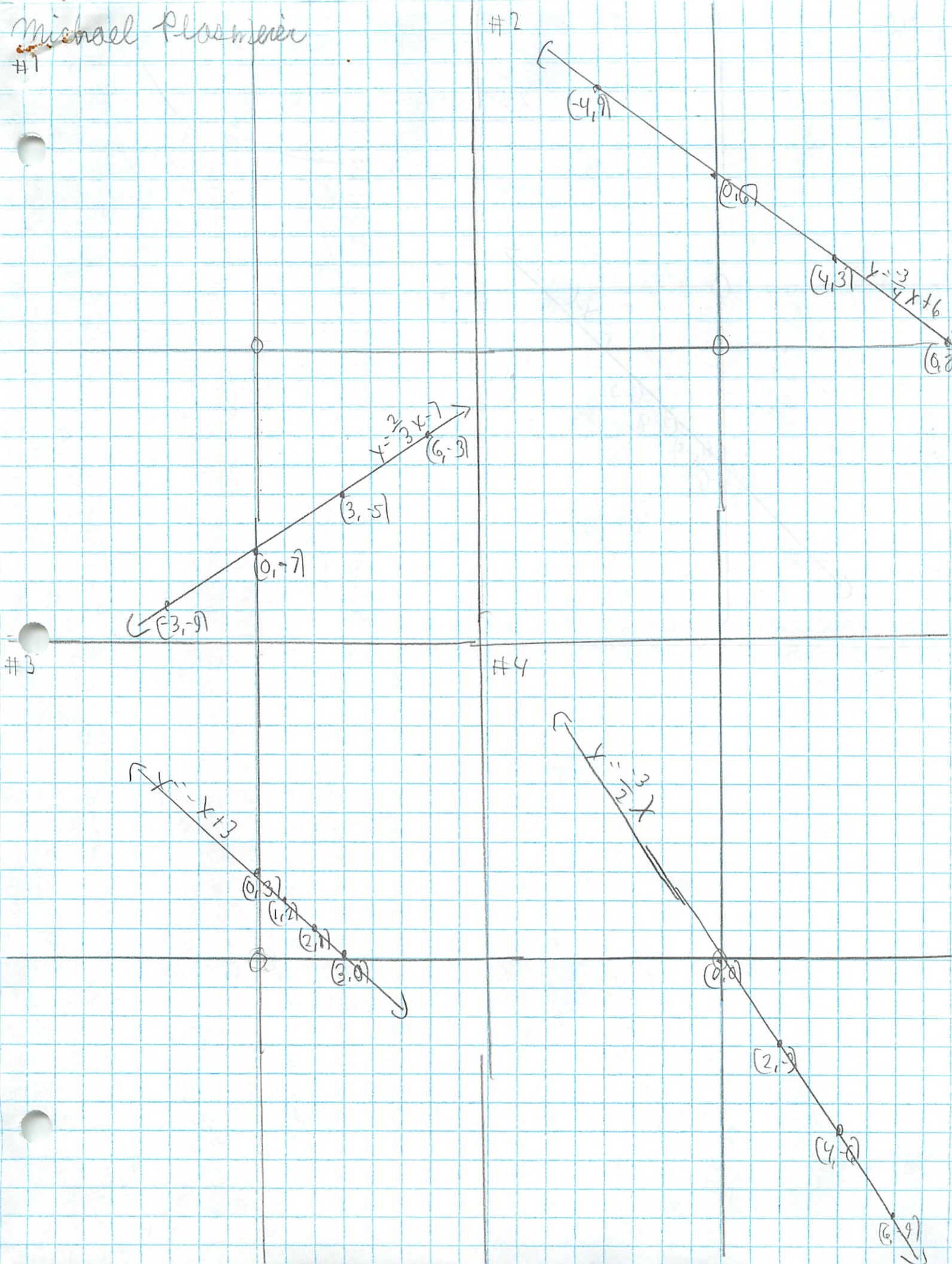
$$\begin{aligned}
 6. \quad y &= mx + b \\
 m &= (1, -4) \\
 & (0, -7) \\
 & [1 - 0, -4 - (-7)] \\
 & [1, 3] \\
 \frac{y}{x} &= \frac{3}{1} \rightarrow 3 \\
 b &= (0, -7) \rightarrow -7 \\
 y &= 3x - 7
 \end{aligned}$$

Over \rightarrow

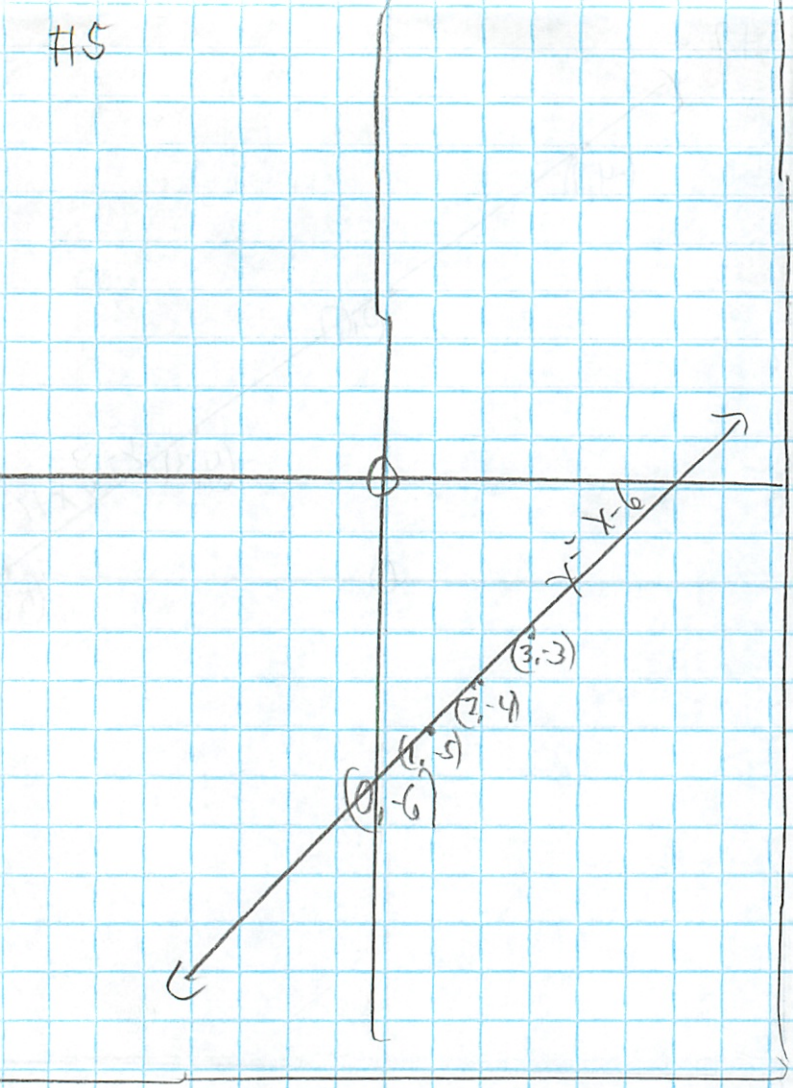
$$\begin{aligned}
 7. \quad y &= mx + b \\
 m &= (1, -6) \\
 & \quad (0, 5) \\
 & \quad [1-0, -6-(5)] \\
 & \quad \quad (1, -1) \\
 \frac{y}{x} &= \frac{-1}{1} \rightarrow -1 \rightarrow -1 \\
 b &= (0, 5) \rightarrow 5 \\
 y &= -1x + 5
 \end{aligned}$$

$$\begin{aligned}
 8. \quad y &= mx + b \\
 m &= (3, 0) \\
 & \quad (0, 6) \\
 & \quad [3-0, 0-6] \\
 & \quad \quad (3, -6) \\
 \frac{y}{x} &= \frac{-6}{3} \rightarrow -\frac{6}{3} \rightarrow -2 \rightarrow -2 \\
 b &= (0, 6) \rightarrow 6 \\
 y &= -2x + 6
 \end{aligned}$$

Michael Plasmier
#1



#5



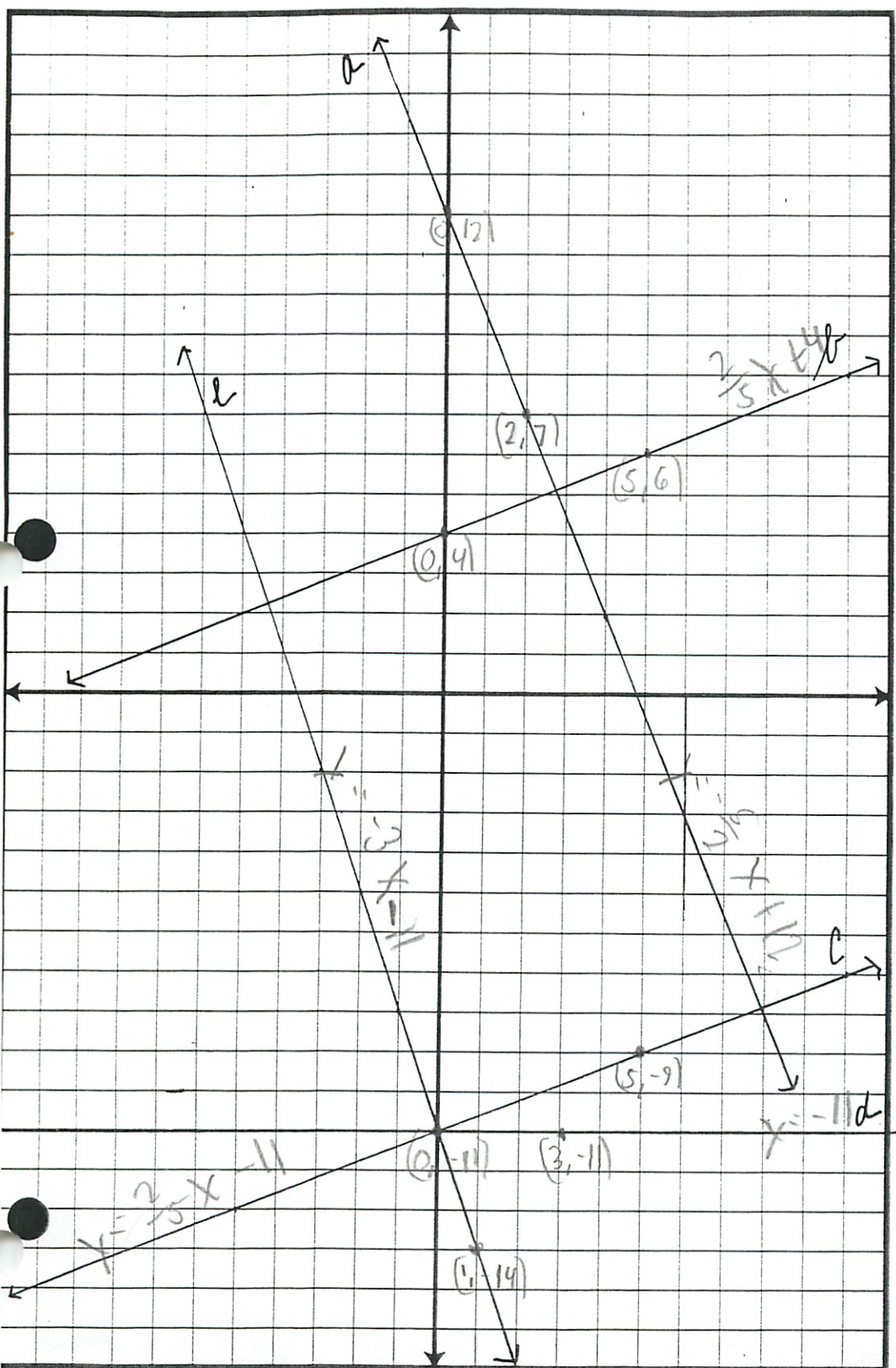
Test

100%
Fantastic!

Quiz -- Equations of Lines
Test

Name: Michael Plesmeier

A. Write the equation of each line. Use the slope (m) and y-intercept (b) to write each equation.



a

$$b = \frac{-12}{1}$$

$$m = \frac{-5}{2}$$

$$y = -\frac{5}{2}x + 12$$

b

$$b = 4$$

$$m = \frac{2}{5}$$

$$y = \frac{2}{5}x + 4$$

c

$$b = \frac{-11}{1}$$

$$m = \frac{2}{5}$$

$$y = \frac{2}{5}x - 11$$

d

$$b = \frac{-11}{0}$$

$$m = 0$$

$$y = -11$$

e

$$b = \frac{-11}{1}$$

$$m = -3$$

$$y = -3x - 11$$

A: a. $y = mx + b$

$$m = \begin{pmatrix} 2, 7 \\ 0, 12 \end{pmatrix}$$

$$\begin{bmatrix} 2-0, 7-12 \end{bmatrix}$$

$$\begin{bmatrix} 2, -5 \end{bmatrix}$$

$$\frac{y}{x} = \frac{-5}{2} \rightarrow -\frac{5}{2}$$

$$b = (0, 12) \rightarrow 12$$

$$y = -\frac{5}{2}x + 12$$

d. $y = mx + b$

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

$$\begin{bmatrix} 3-0, -11-(-11) \end{bmatrix}$$

$$\begin{bmatrix} 3, 0 \end{bmatrix}$$

$$\begin{bmatrix} 3, 0 \end{bmatrix}$$

$$\frac{y}{x} = \frac{0}{3} \rightarrow 0$$

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

$$y = 0x - 11 \rightarrow y = -11$$

b. $y = mx + b$

$$m = \begin{pmatrix} 5, 6 \\ 0, 4 \end{pmatrix}$$

$$\begin{bmatrix} 5-0, 6-4 \end{bmatrix}$$

$$\begin{bmatrix} 5, 2 \end{bmatrix}$$

$$\begin{bmatrix} 5, 2 \end{bmatrix}$$

$$\frac{y}{x} = \frac{2}{5}$$

$$b = (0, 4) \rightarrow 4$$

$$y = \frac{2}{5}x + 4$$

e. $y = mx + b$

$$m = \begin{pmatrix} 1, -14 \\ 0, -11 \end{pmatrix}$$

$$\begin{bmatrix} 1-0, -14-(-11) \end{bmatrix}$$

$$\begin{bmatrix} 1, -3 \end{bmatrix}$$

$$\begin{bmatrix} 1, -3 \end{bmatrix}$$

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

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

$$y = -3x - 11$$

c. $y = mx + b$

$$\begin{pmatrix} 5, -9 \\ 0, -11 \end{pmatrix}$$

$$\begin{bmatrix} 5-0, -9-(-11) \end{bmatrix}$$

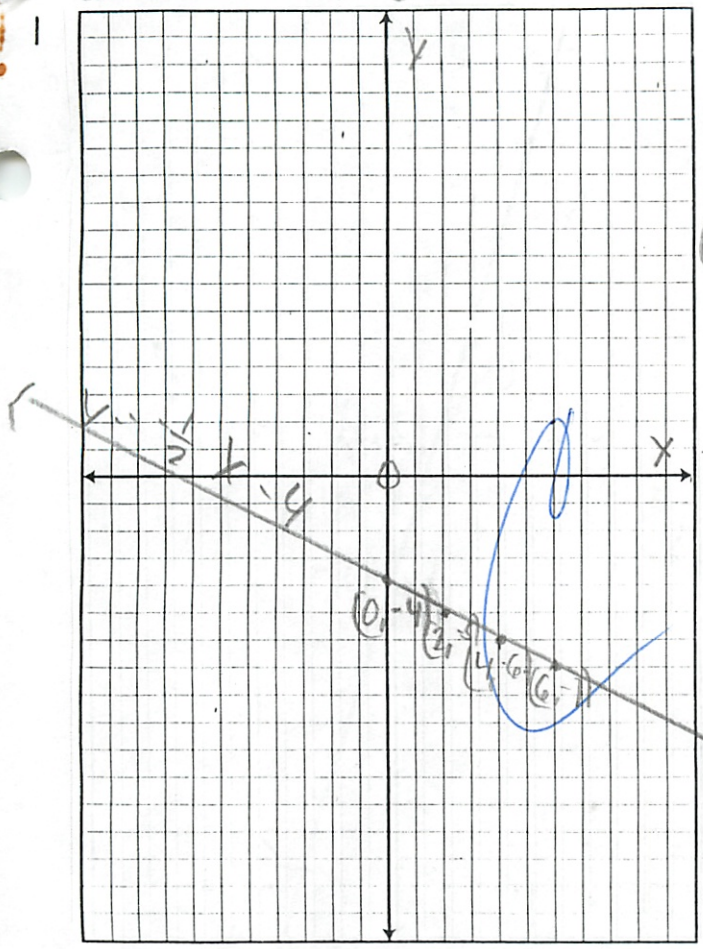
$$\begin{bmatrix} 5, 2 \end{bmatrix}$$

$$\begin{bmatrix} 5, 2 \end{bmatrix}$$

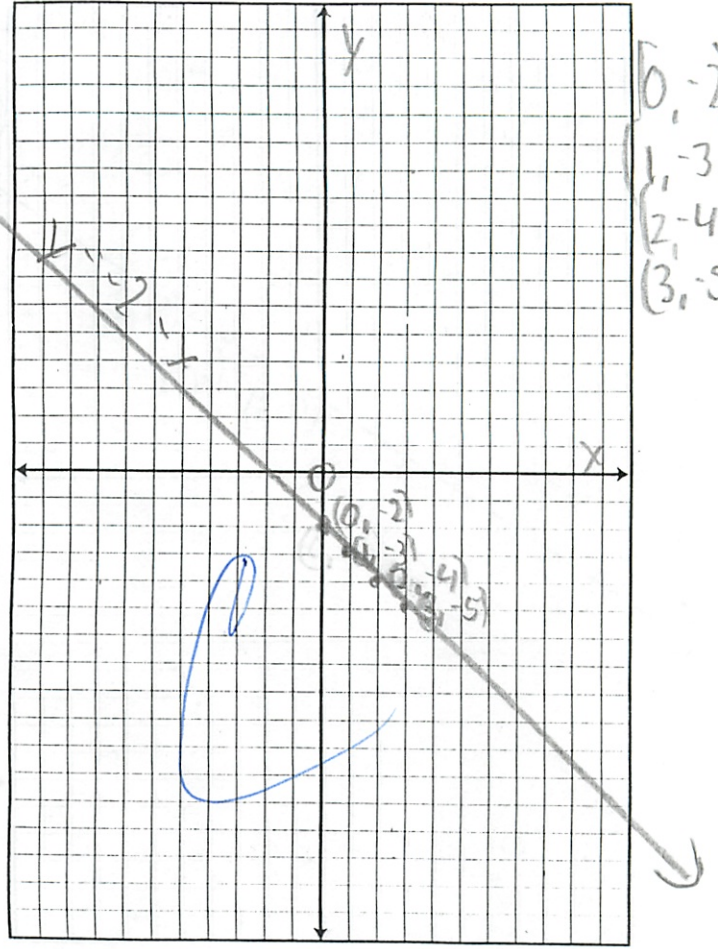
$$\frac{y}{x} = \frac{2}{5}$$

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

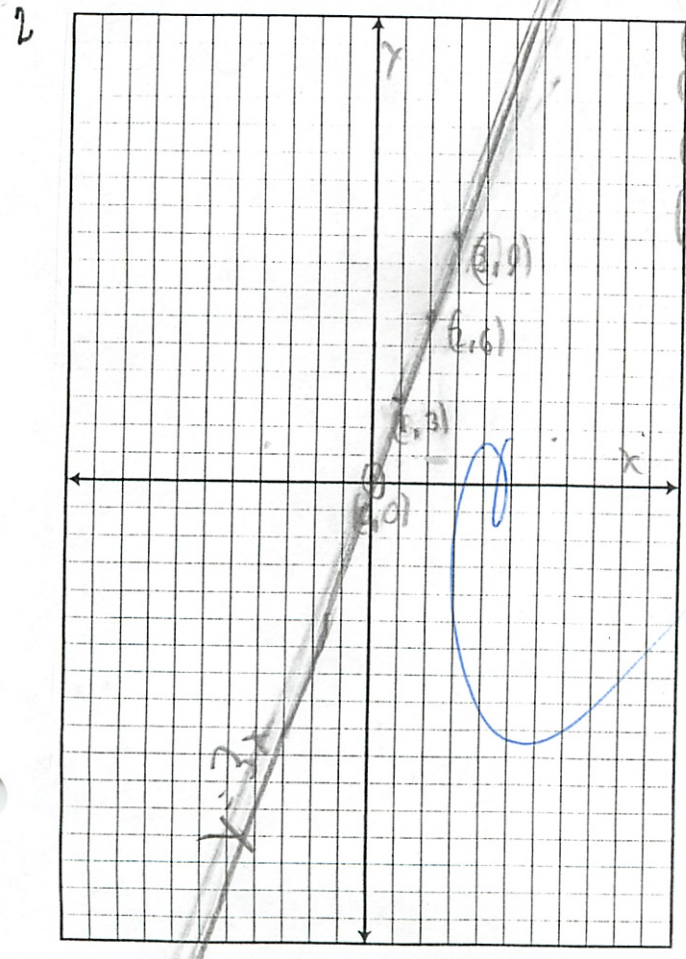
$$y = \frac{2}{5}x - 11$$



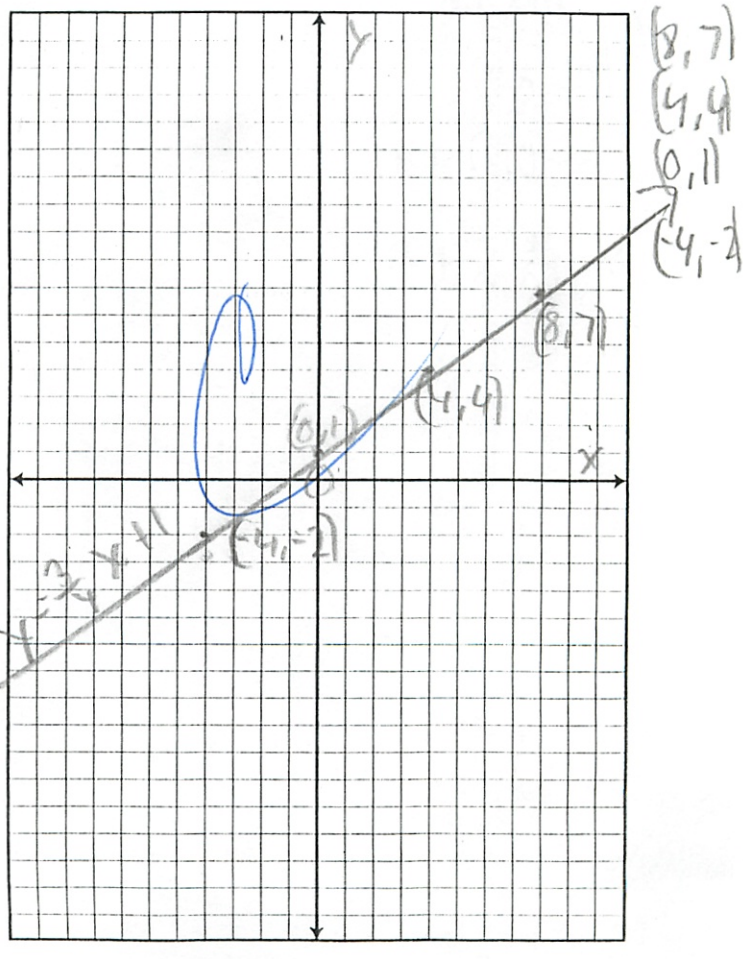
3
 $(0, -4)$
 $(2, -5)$
 $(4, -6)$
 $(6, -7)$



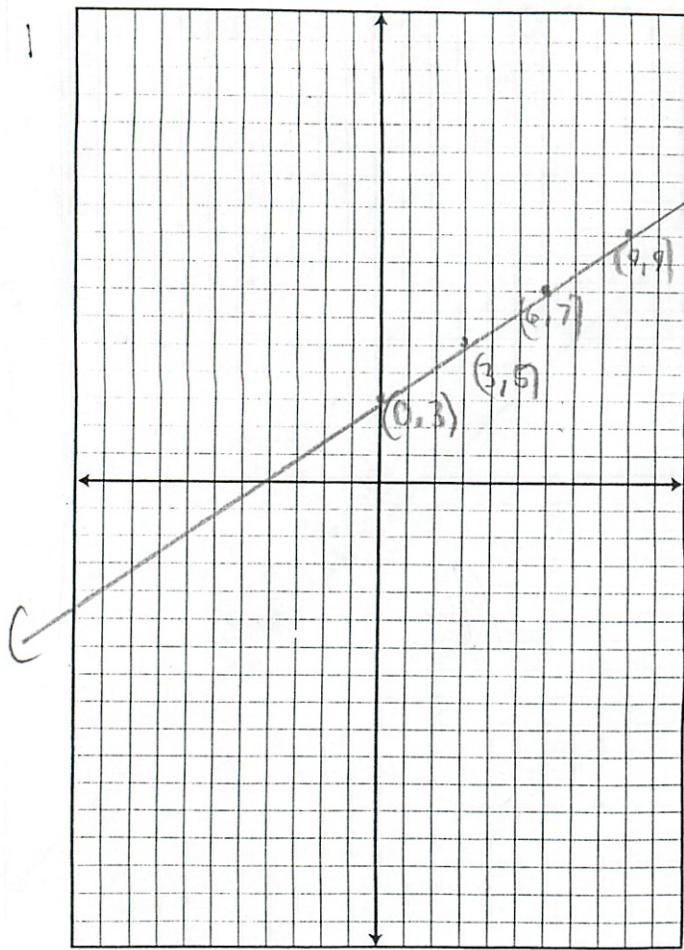
5
 $(0, -1)$
 $(1, -3)$
 $(2, -5)$
 $(3, -7)$



4
 $(0, 0)$
 $(1, 3)$
 $(2, 6)$
 $(3, 9)$



6
 $(0, 1)$
 $(4, 4)$
 $(8, 7)$
 $(12, 10)$



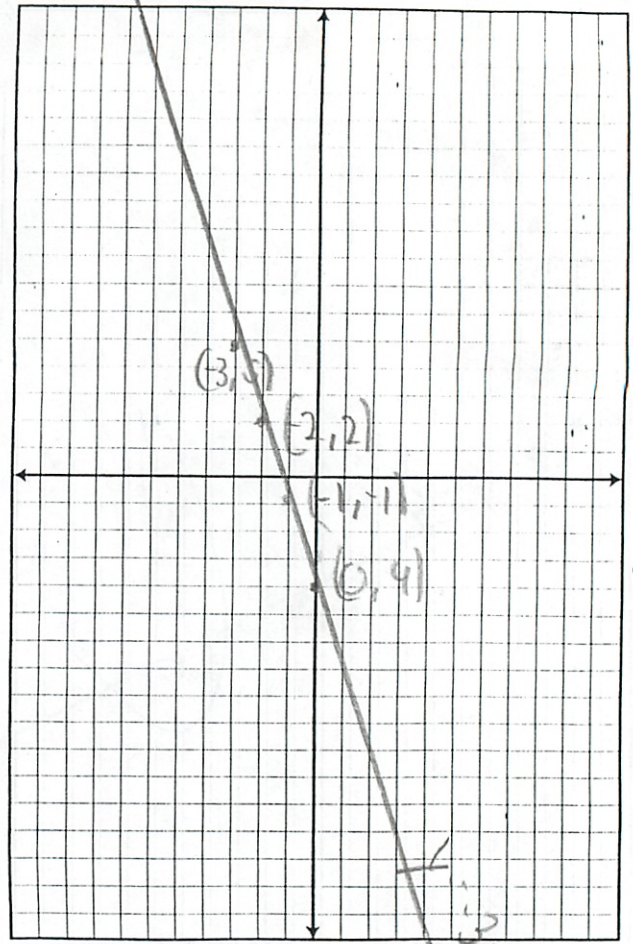
$(9, 9)$
 $(6, 7)$
 $(3, 5)$
 $(0, 3)$

$$y = mx + b$$

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

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

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



$(-3, 5)$
 $(-2, 2)$
 $(-1, 1)$
 $(0, 4)$

$$y = mx + b$$

$$m = -3$$

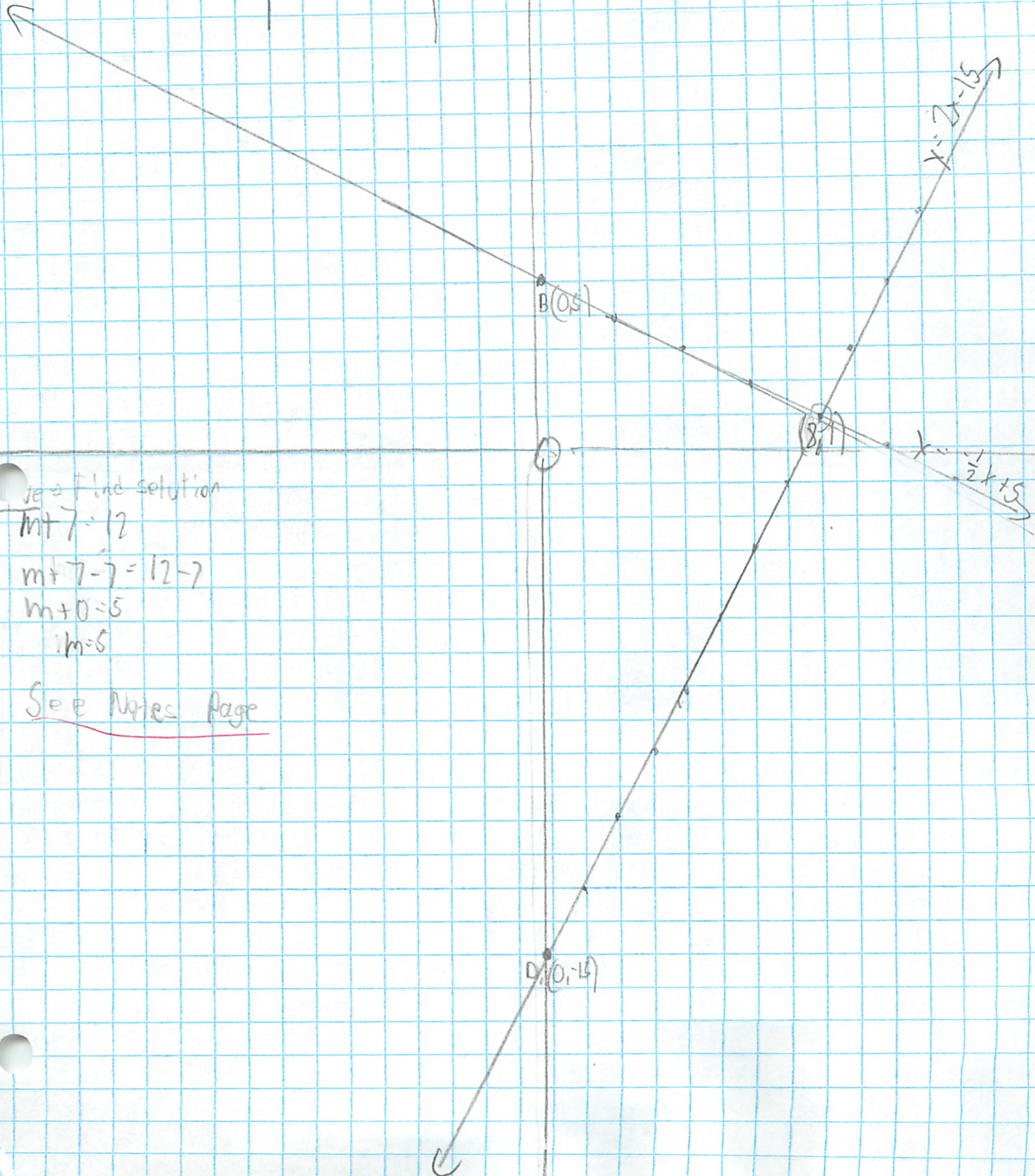
$$b = (0, 4)$$

$$y = -3x + 4$$

Solving Equations Algebra

$$y = 2x - 15 \quad \textcircled{A} \quad m = 2 \rightarrow \frac{2}{1} \frac{y}{x} \quad b = -15 \rightarrow (0, -15)$$

$$y = -\frac{1}{2}x + 5 \quad \textcircled{B} \quad m = -\frac{1}{2} \frac{y}{x} \quad b = 5 \rightarrow (0, 5)$$



to find solution
 $m + 7 = 12$
 $m + 7 - 7 = 12 - 7$
 $m + 0 = 5$
 $m = 5$

See Notes Page

