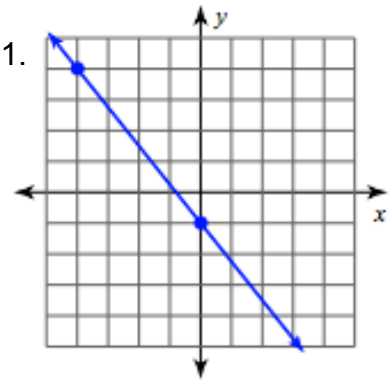
Name _____ Period _____

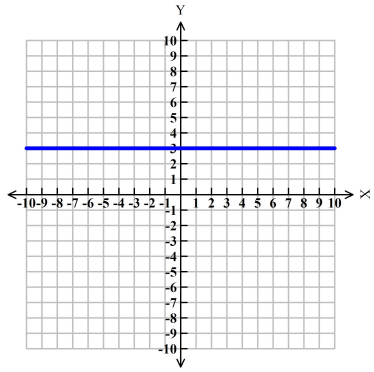
Unit 3 Study Guide

Finding Slope

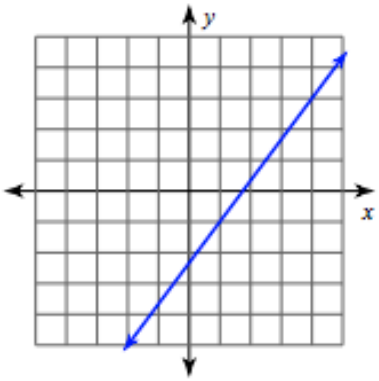
Find the slope from the graphs given below:

1. 

m = _____

2. 

m = _____

3. 

m = _____

Find the slope from the sets of points given below by using the slope formula:

4. (-12, 1) and (4, 1)

m = _____

5. (-15, 9) and (0, 3)

m = _____

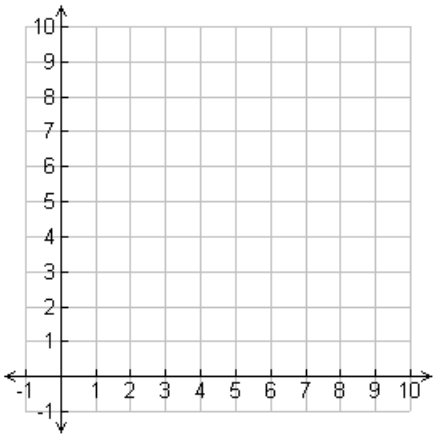
6. (10, 17) and (7, 8)

m = _____

Graph these points on the line below: (4, 3) and (8, 5)

7. Find the slope of the line by using your graph.

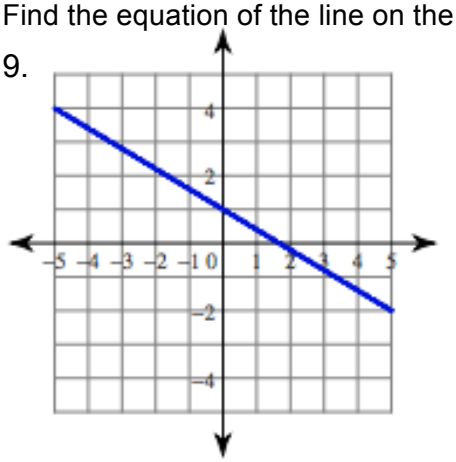
8. Find the slope of the line algebraically.



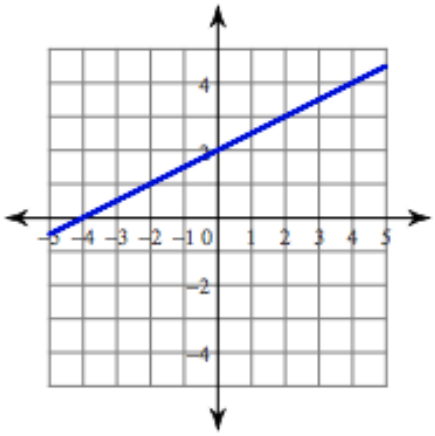
Equations of Lines

Find the equation of the line on the graphs below:

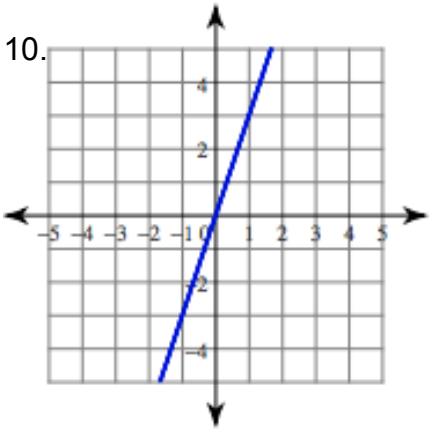
9.



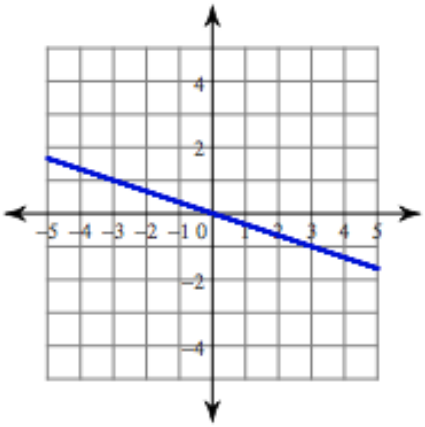
11.



10.

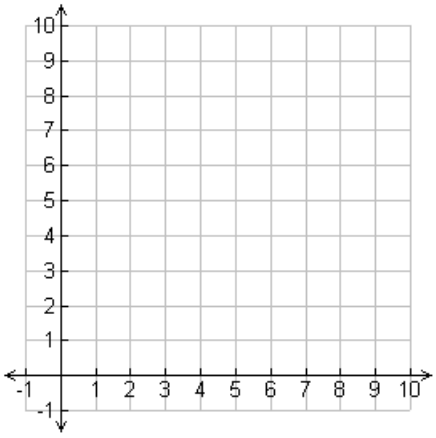


12.

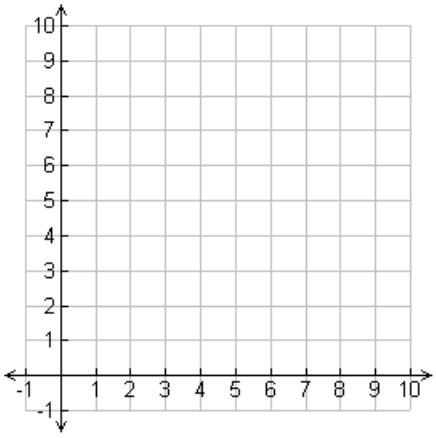


Find the equation that passes through the following set of points:

13. (3, 4) and (6, 1)



14. (3, 5) and (6, 9)

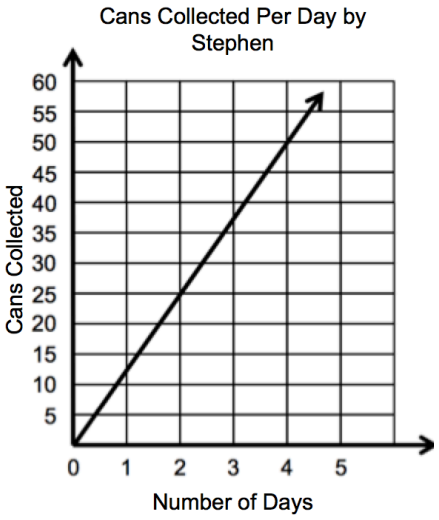


Comparing and Analyzing Linear Forms

15. Three students saved money for four weeks.

The following situations represent the number of cans collected by students during a food drive.

Stephen collected cans for five days. He made this graph to show how many cans he collected:



Rachel collected cans for five days. She made this table to show how much money her students saved:

Day	Number of Cans Collected
1	10
2	20
3	30
4	40
5	50

Colleen collected cans for five days. She wrote an equation to show how much money they saved. In the equation, *C* represents the number of cans collected, and *d* is the number of days.

$$C = 14d$$

Identify the student who saved the greatest number of cans each week and the least number of cans each week. Write the student's name next to the appropriate description:

_____ is the student who collected the greatest number of cans.

_____ is the student who collected the least number of cans.

Predict how many cans each student will have collected at the end of 8 days:

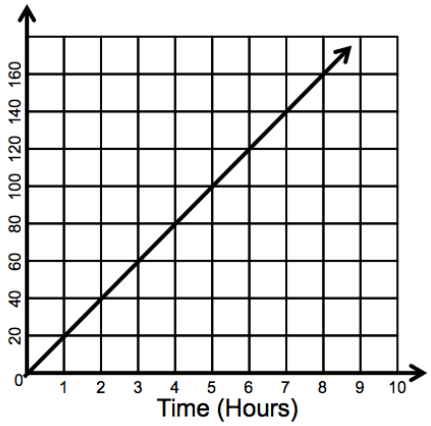
Stephen: _____

Rachel: _____

Colleen: _____

16. Compare the scenarios to determine which represents a greater speed.

Scenario 1:



Scenario 2:

$y = 25x$

x is time in hours

y is distance in miles

Explain which scenario represents a greater speed.

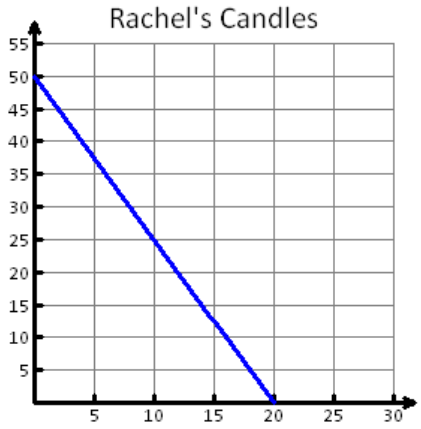
_____

_____

_____

Proportional Relationships

17. Design two different size triangles and prove equal slopes algebraically:



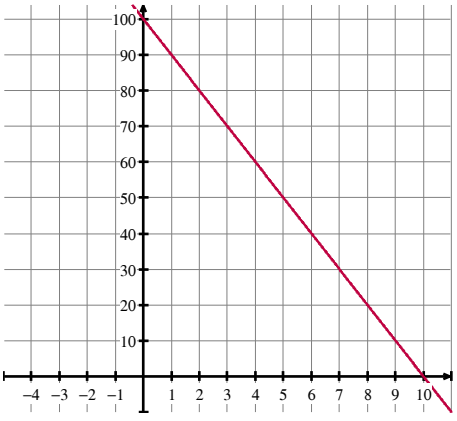
a. Prove that Triangles A and B have the same slope using equivalent fractions.

Slope of A: Point 1 (,) Point 2 (,)

Slope of B: Point 1 (,) Point 2 (,)

b. What is the slope of the line formed by the data points on the graph? _____

18. On the graph to the right, draw two slope triangles to find the slope of the given line. Label your triangle A and B and prove their slopes are the same using equivalent fractions.



Slope of A: Point 1 (,) Point 2 (,)

Slope of B: Point 1 (,) Point 2 (,)

19. Create two tables below, one that is proportional and one that is not. Identify and explain which table represents a linear relationship that is proportional and which table is not proportional and why not.

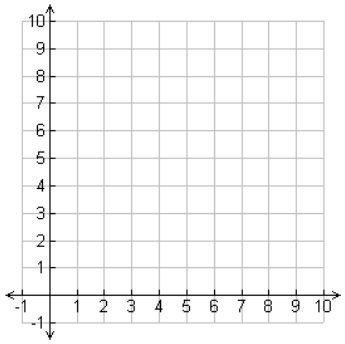
x						
y						

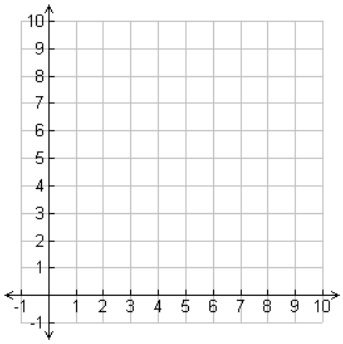
x						
y						

_____ _____

_____ _____

20. Create two graphs, one that is proportional and one that is not. Explain which graph is which.

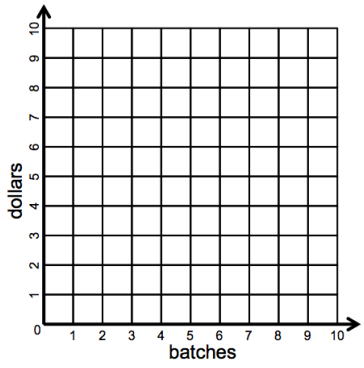




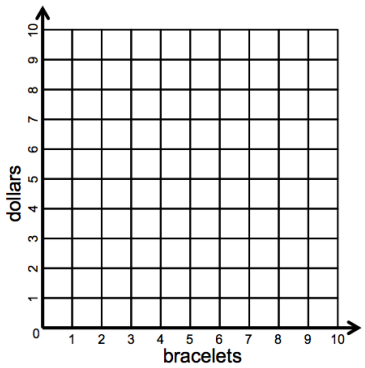
_____ _____

21. The following situations describe individuals' contributions to a fundraiser. Graph the following proportional relationships. Be sure to label your axes correctly.

a. When baking cookies, Sally makes $9 for every three batches sold.



b. Robbie earns $6 for every two bracelets he sells.



c. Which of the proportional relationships above has the greatest rate (or slope)? Explain.

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