

Unit 4: Rate of Change and Linear Relationships

Test Study Guide

Directions: Answer all parts of the following questions about proportional relationships. Show all work. Be sure to include all appropriate units.

1) Alex spent \$18.00 on 24 golf balls.

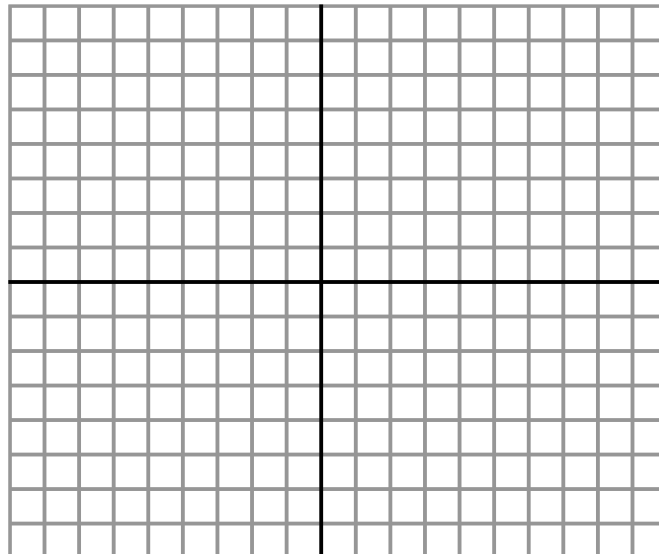
a) Find the unit cost.

b) Write the equation that models this situation.

c) First, indicate what x and y both represent. Then, use the equation you wrote in part b to complete the table.

_____ (x)	0	2	4	6	8
_____ (y)					

d) Graph the line that models this situation by plotting and connecting the points from the table.



e) What is the slope of the line?

Directions: Determine if the ratios below are proportional. Either simplify both fractions and compare or check for a scale factor. Show all work.

2) $\frac{1}{5} \square \frac{6}{30}$

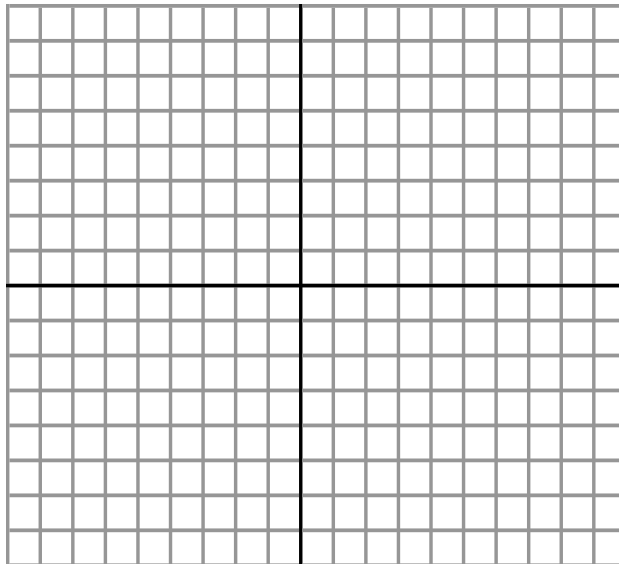
3) $-\frac{15}{6} \square \frac{-5}{-2}$

4) $-\frac{6}{9} \square \frac{20}{30}$

Directions: Answer the following questions about slope. Show all work used to support your answers.

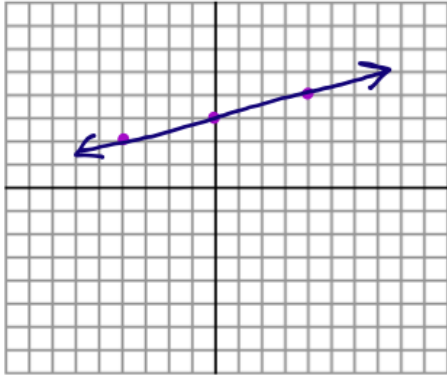
5) If the slope of the line that contains points A and B is $\frac{9}{27}$ and the slope of the line that contains points A and C is $\frac{-2}{-6}$, are points A, B, and C collinear?

6) Point A has coordinates (1, 3), Point B has coordinates (2, 6), and Point C has coordinates (-1, -6), are A, B, and C collinear?



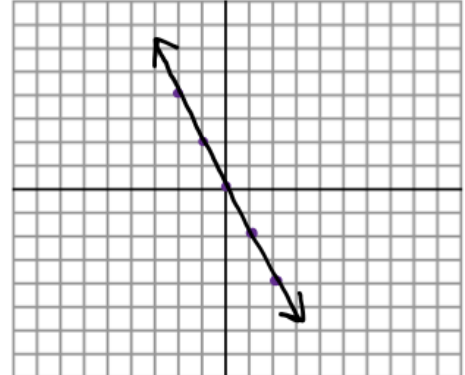
Directions: Write the equations of the following linear relationships.

7)



Equation _____

8)



Equation _____

9)

x	3	2	1	0	-1
y	-4	-1	2	5	8

Equation _____

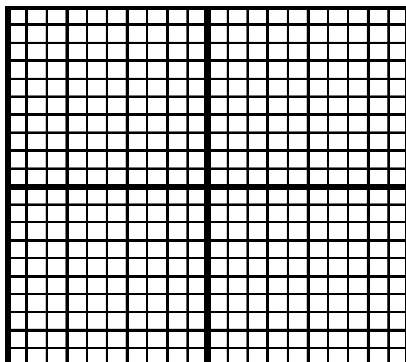
10)

x	y
2	3
4	7
6	11
8	15
10	19

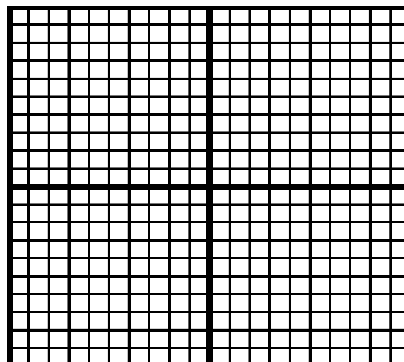
Equation _____

Directions: Graph each line. Plot as many points as possible on the given coordinate plane.

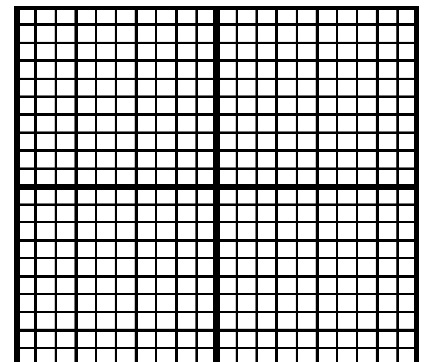
11) $y = 3x - 4$



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



13) $y = -\frac{2}{3}x$



Directions: Use your knowledge of proportional relationships to answer the following questions. Show all work.

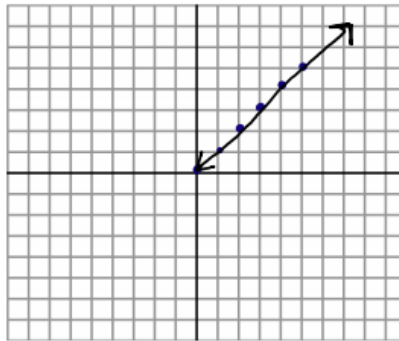
14) The price Betty paid for bananas can be represented using the equation $y = .75x$, the price Beth paid for bananas is represented in the table below and the price Kathy paid for bananas is represented in the graph below. Determine who paid the best price for bananas and explain how you know.

Betty:

Beth:

Pounds (x)	0	2	4	6	8
Cost \$ (y)	0	1	2	3	4

Kathy:



15) Allie is working to save money to buy a new sweater that costs \$40. Hanna is working to save money to buy the same sweater. Determine who will buy the sweater first and explain how you know.

Allie:

x (# hours worked)	1	2	3	4	5
y (total income)	8	16	24	32	40

Hanna:

