5.6

Direct Variation (Day 2)

What is it and how do I know when I see it?

x	y
1	3
2	6
3	9
4	12

A direct variation is a relationship between two sets of numbers.

You can tell this when there are equivalent ratios you can write from the second number and the first number.

The simplified ratio of the set of numbers is called the constant of variation.

Equation of Direct Variation

$$y = kx$$

x	y
1	3
2	6
3	9
4	12

You can write the ratio of the constant of variation as

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

What is the constant of variation for the example on the left?

Review

x	y
6	12
7	14
8	16

1) What is the constant of variation of the table above?

Review

x	y
4	-8
8	-16
-6	12
3	-6

2) What is the constant of variation of the table above?

How can you tell if the graph is a direct variation?

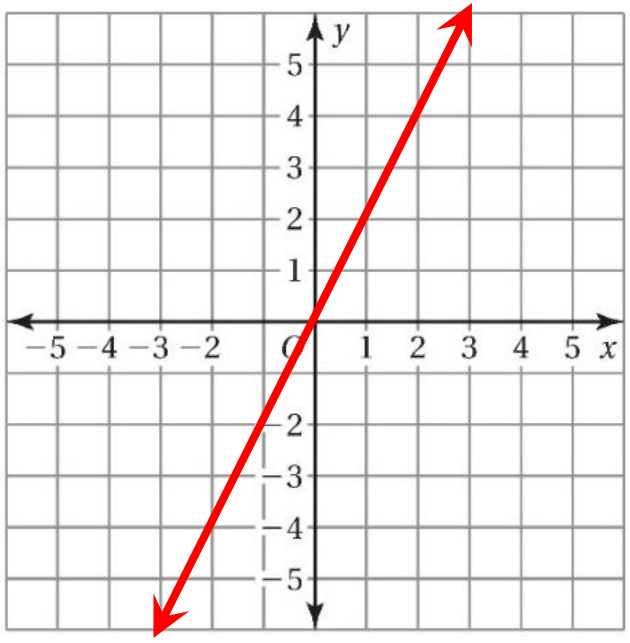
a) _____

b) _____

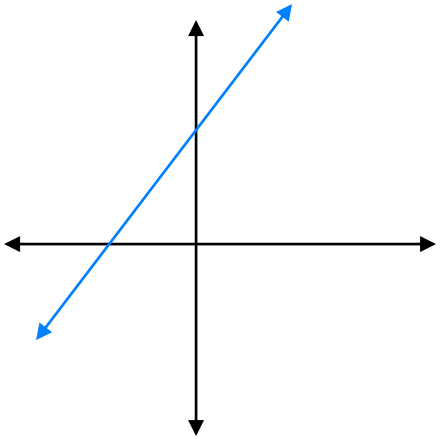
_____

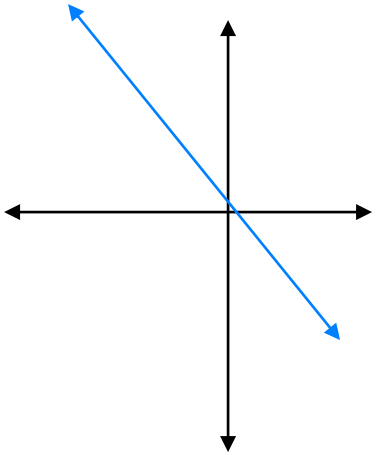
c) _____

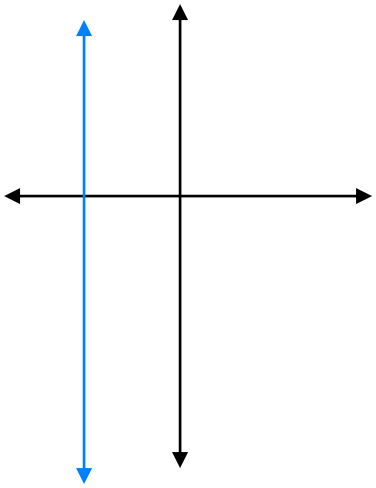
_____

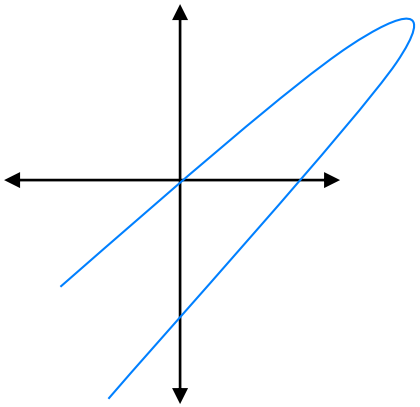


Tell if the following graph is a Direct Variation or not.







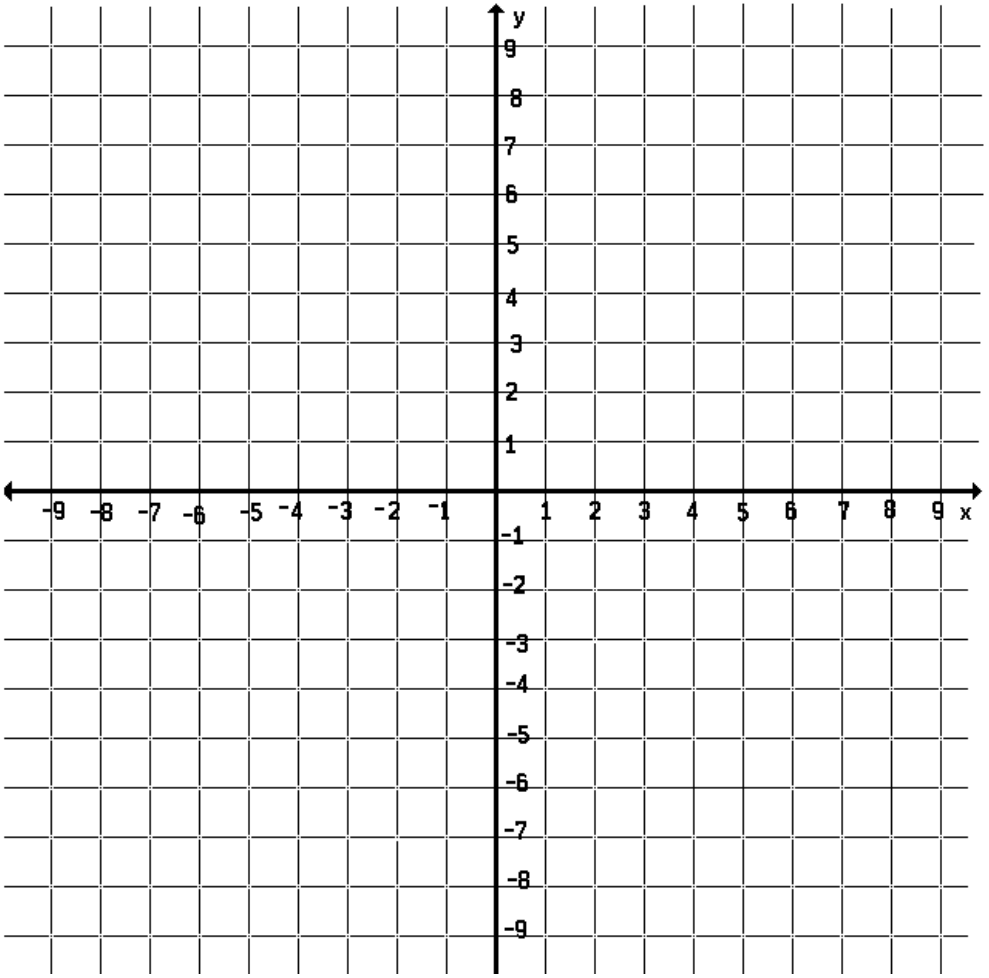


Identifying Direct Variation by Its Graph

Tell whether *x* and *y* show direct variation. Explain your reasoning.

x	y
-2	-8
-1	-4
1	4
2	8

- Plot the points.
- Draw a line through the points.
- Explain.



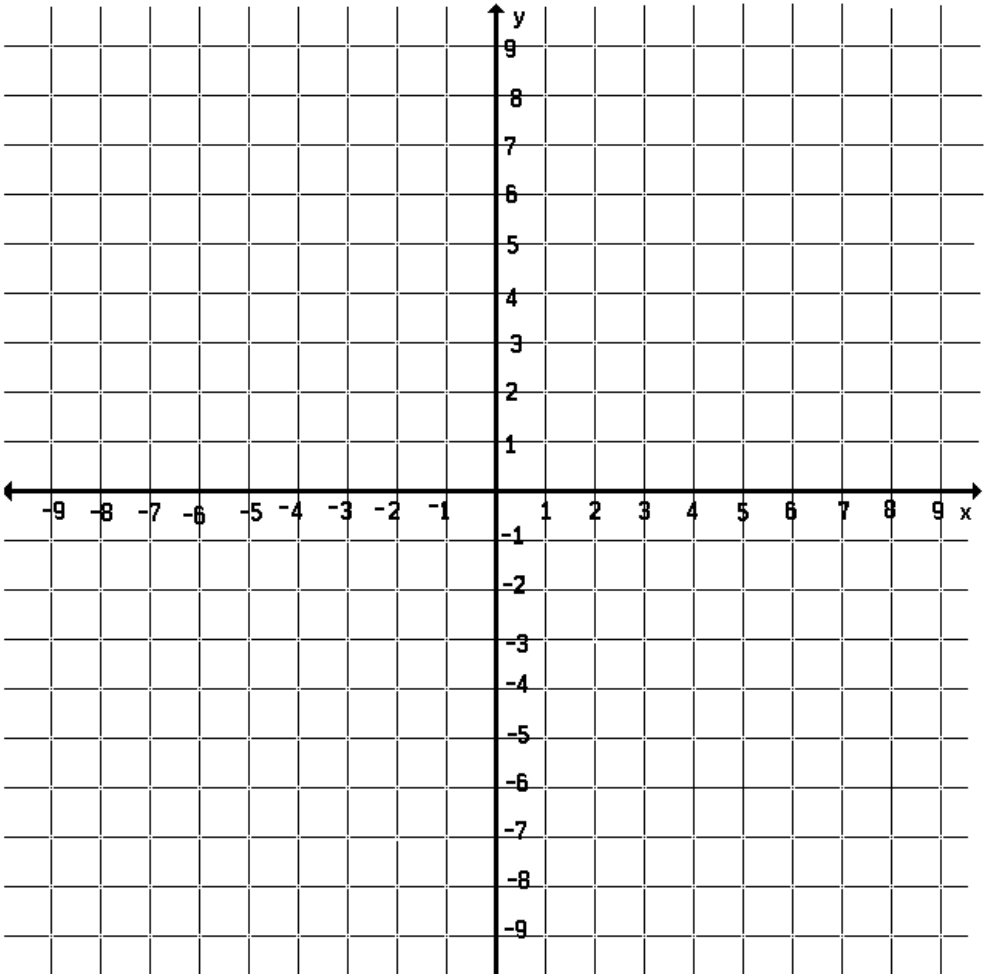
Identify the slope =

Identify the constant of variation =

Identifying Direct Variation by Its Graph

Tell whether *x* and *y* show direct variation. Explain your reasoning.

x	1	2	3	4
y	-2	0	2	4



- Plot the points.
- Draw a line through the points.
- Explain.

Identify the slope =

Identify the constant of variation =

Identifying Direct Variation

Tell whether *x* and *y* show direct variation. Explain your reasoning.

a) $y + 1 = 2x$

b) $y = x$

- Can the equation be written as y = kx?
- If yes, then x and y show direct variation.
- If no, then x and y do not show direct variation.

Practice

- Can the equation be written as y = kx?
- If yes, then x and y show direct variation.
- If no, then x and y do not show direct variation.

Tell whether *x* and *y* show direct variation. Explain your reasoning.

1) $xy = 3$

2) $y + 3 = x$

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

Finding the Equation of Direct Variation

The variables x and y vary directly. Use the values to find the constant of proportionality. Then write an equation that relates x and y.

4) $y = 72;\ x = 3$

5) $y = 20;\ x = 12$