

## 8.3 Proportional Representations

# PRACTICE

The following are proportional. Fill in the missing table, equation, and/or graph. Then answer the questions.

1. **Verbal:** Mr Kelly makes 3 dollars every 2 minutes tutoring math.

**Table**

Time (minutes)	Money (\$)
0	0
4	6
2	3
8	12

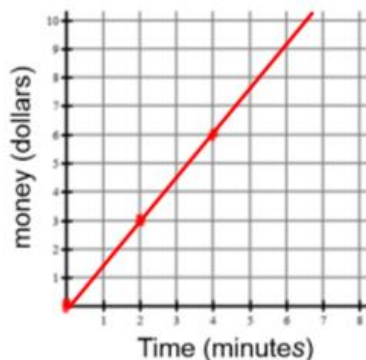
**Equation**

$$k = \frac{3}{2} \text{ or } 1.5$$

Write the equation.

$$y = \frac{3}{2}x \text{ or } y = 1.5x$$

**Graph**



- a. Use a sentence to explain what  $k$  means in this context.

**Mr. Kelly gets 3 dollars every 2 minutes.**

- b. How much money will Mr. Kelly make in 60 minutes? Use your equation.

$$y = \frac{3}{2}(60) \quad y = 90 \text{ dollars}$$

- c. How long will it take for Mr. Kelly to earn 100 dollars? Use your equation.

$$100 = \frac{3}{2}x \quad x = \frac{200}{3} \text{ or } 66.\bar{6} \text{ minutes}$$

2. **Verbal:** Mr. Brust is trying to win a stuffed animal by playing the Claw game. He spends 0.50 per game.

**Table**

Games Played (#)	Money Spent (\$)
2	1
15	7.5
18	9
6	3

**Equation**

$$k = 0.5$$

$$\text{or } \frac{1}{2}$$

Given the equation.

$$m = 0.5g$$

**Graph**



- a. Use a sentence to explain what  $k$  means in this context.

**Mr. Brust pays 50 cents per game of the Claw.**

- b. How many games did Mr. Brust play if he spent \$10 on the Claw game? Use the equation.

$$\frac{10 = 0.5g}{0.5 \quad 0.5} \quad g = 20 \text{ games}$$

- c. How much will 40 games of the Claw cost? Use the equation.

$$m = 0.5(40) \quad m = 20 \text{ dollars}$$

3. Verbal: The ratio of concentrate to water in "Ain't Ur Granny's Lemonade" is 2 cups to 1 cups.

x Table y

Water (cups)	Concentrate (cups)
4	8
1	2
6	12

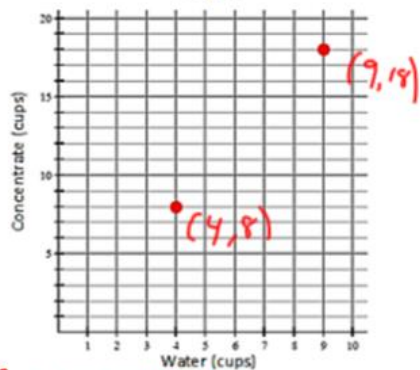
Equation

$$k = \frac{8}{4} = 2$$

Write the equation.

$$y = 2x$$

Graph



a. Use a sentence to explain the meaning of the point (4,8).

The recipe uses 4 cups of water for 8 cups of concentrate.

b. How many cups of water do you need to make the lemonade if you have 6 cups of concentrate?

$$6 = 2x \quad x = 3 \text{ cups of water}$$

c. How many cups of concentrate do you need to make the lemonade if you have 40 cups of water?

$$y = 2(40) \quad y = 80 \text{ cups of concentrate}$$

Use the equation to fill in the table, answer the question, and graph.

4.

Table

x	y
0	0
2	6
6	18
5	15

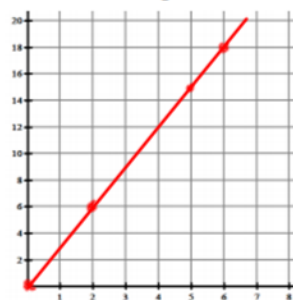
Equation

$$y = 3x$$

Is the equation proportional?

YES or No

Graph



5.

Table

x	y
0	0
2	1
4	2
8	4

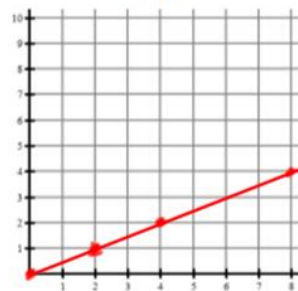
Equation

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

Is the equation proportional?

YES or No

Graph



6.

Table

x	y
0	8
2	4
1	6
4	0

Equation

$$y = -2x + 8$$

Is the equation proportional?

YES or No

Graph

