

## Unit 2 Assessment ~ Proportional Relationships

### EdGems Math – Course 2

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

1. Write two different ratios that would form a proportion with the ratio of  $\frac{8}{6}$ .

**Solve each proportion.**

2.  $\frac{3}{4} = \frac{12}{x}$

3.  $\frac{15}{25} = \frac{y}{30}$

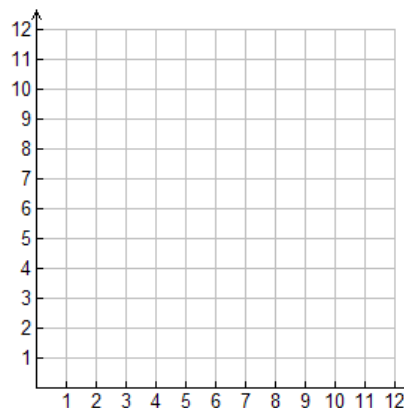
4. Tyson bought four roses for \$8.88. If the cost per rose is constant, how much would 6 roses cost?

5. Mia ran 10 laps in 8 minutes. Shawna ran 4 laps in 3 minutes. Which person ran at a faster rate? Use mathematics to justify your answer.

6. A proportional relationship is modeled by the equation  $y = 3x$ . Complete the table, graph the relationship and give the constant of proportionality.

Input $x$	Output $y$
0	
1	
2	
3	
4	

Constant of proportionality: \_\_\_\_\_



Determine whether each table models a proportional relationship. Circle YES or NO. If it does, give the constant of proportionality. If not, explain why not.

7.

$x$	$y$
0	0
1	2
2	4
4	8
8	16

Proportional relationship? YES NO

Constant of Proportionality or Explanation:

8.

$x$	$y$
0	3
1	6
2	9
3	12
4	15

Proportional relationship? YES NO

Constant of Proportionality or Explanation:

Determine whether each equation models a proportional relationship. Circle YES or NO. If it does, give the constant of proportionality. If not, explain why not.

9.  $y = \frac{3}{x}$

Proportional relationship? YES NO

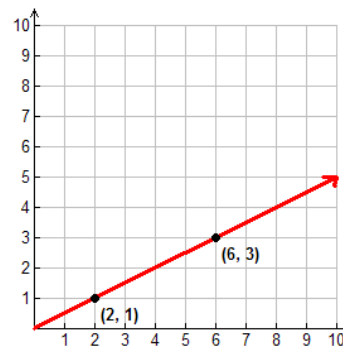
Constant of Proportionality or Explanation:

10.  $y = 0.8x$

Proportional relationship? YES NO

Constant of Proportionality or Explanation:

11. Tia says the graph models a proportional relationship with an equation of  $y = \frac{1}{2}x$ . Jon says the equation for the graph is  $y = 2x$ . Which person is correct? Explain your reasoning.



12. The table below shows the amount of money Paul earns for the number of hours he washes cars. Write an equation that shows the amount of money,  $y$ , Paul earns for  $x$  hours of work.

$x$	$y$
0	0
2	14
4	28
6	42
8	56

13. The table below shows the amount of money Brandi earned tutoring friends from school. How many hours will Brandi need to tutor to earn \$111.00?

Hours Tutoring	Money Earned (\$)
0	0
2	18.50
4	37.00
6	55.50
8	74.00

## Unit 2 Assessment ~ Proportional Relationships

### EdGems Math – Course 2

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

1. Write two different ratios that would form a proportion with the ratio of  $\frac{10}{4}$ .

**Solve each proportion.**

2.  $\frac{3}{4} = \frac{24}{x}$

3.  $\frac{20}{25} = \frac{y}{30}$

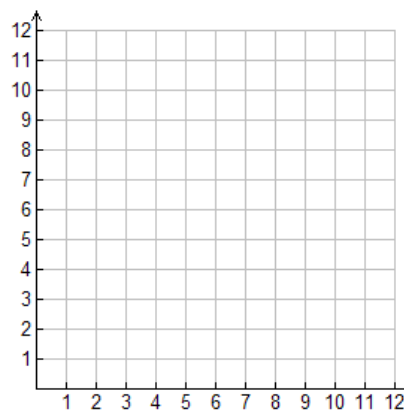
4. Greg bought four roses for \$12.80. If the cost per rose is constant, how much would 9 roses cost?

5. Mia ran 10 laps in 6 minutes. Shawna ran 5 laps in 4 minutes. Which person ran at a faster rate? Use mathematics to justify your answer.

6. A proportional relationship is modeled by the equation  $y = 2x$ . Complete the table, graph the relationship and give the constant of proportionality.

Input $x$	Output $y$
0	
1	
2	
3	
4	

Constant of proportionality: \_\_\_\_\_



Determine whether each table models a proportional relationship. Circle YES or NO. If it does, give the constant of proportionality. If not, explain why not.

7.

$x$	$y$
0	3
1	6
2	9
3	12
4	15

Proportional relationship? YES NO

Constant of Proportionality or Explanation:

8.

$x$	$y$
0	0
1	5
2	10
4	20
6	30

Proportional relationship? YES NO

Constant of Proportionality or Explanation:

Determine whether each equation models a proportional relationship. Circle YES or NO. If it does, give the constant of proportionality. If not, explain why not.

9.  $y = 1.5x$

Proportional relationship? YES NO

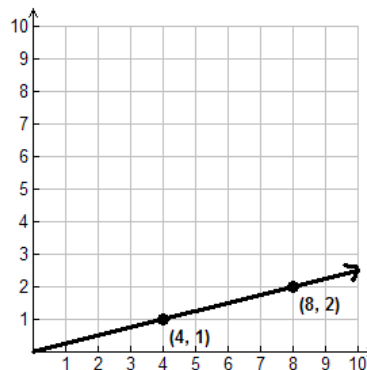
Constant of Proportionality or Explanation:

10.  $y = \frac{10}{x}$

Proportional relationship? YES NO

Constant of Proportionality or Explanation:

11. Beth says the graph models a proportional relationship with an equation of  $y = \frac{1}{4}x$ . Joe says the equation for the graph is  $y = 4x$ . Which person is correct? Explain your reasoning.



12. The table below shows the amount of money Katie earns for the number of hours she washes cars. Write an equation that shows the amount of money,  $y$ , Katie earns for  $x$  hours of work.

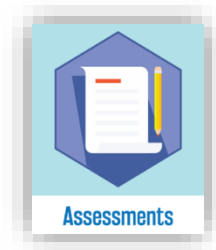
$x$	$y$
0	0
2	18
4	36
6	54
8	72

13. The table below shows the amount of money James earned tutoring friends from school. How many hours will James need to tutor to earn \$116?

Hours Tutoring	Money Earned (\$)
0	0
2	14.50
4	29.00
6	43.50
8	58.00

# Answer Key – Unit Assessment

## Unit 2: Proportional Relationships

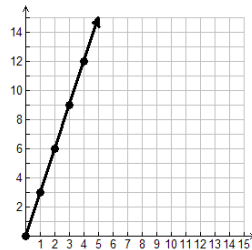


### Form A

- Answers may vary (fraction equivalent to  $\frac{4}{3}$ )
- $x = 16$
- $y = 18$
- \$13.32
- Shawna ( $1.25 \text{ laps/min} < 1.\bar{3} \text{ laps/min}$ )

6.

Input $x$	Output $y$
0	0
1	3
2	6
3	9
4	12



C.O.P = 3

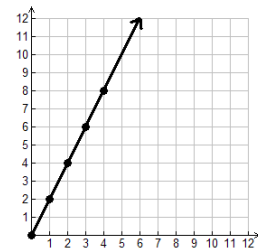
- YES; C.O.P = 2
- NO; Does not go through the origin
- NO; It is not proportional because it does not have a constant of proportionality being multiplied by  $x$ .
- YES; C.O.P = 0.8
- Tia is correct. Answers may vary (i.e. constant of proportionality is  $\frac{3}{6} = \frac{1}{2}$ ).
- $y = 7x$
- 12 hours

### Form B

- Answers may vary (fraction equivalent to  $\frac{5}{2}$ )
- $x = 32$
- $y = 24$
- \$28.80
- Mia ( $1.\bar{6} \text{ laps/min} > 1.25 \text{ laps/min}$ )

6.

Input $x$	Output $y$
0	0
1	2
2	4
3	6
4	8



C.O.P = 2

- NO; Does not go through the origin
- YES; C.O.P = 5
- YES; C.O.P = 1.5
- NO; It is not proportional because it does not have a constant of proportionality being multiplied by  $x$ .
- Beth is correct. Answers may vary (i.e. constant of proportionality is  $\frac{2}{8} = \frac{1}{4}$ ).
- $y = 9x$
- 16 hours

### 1-point Items: #2, 3

These items are each worth one point with no partial credit offered. Items that fall in this category are either lower depth of knowledge (DOK 1: Recall and Reproduce) questions or items that have selected answer options (i.e., True/False). Students can earn 0 or 1 point for each item in this category.

0 points	1 point
The correct solution is not given.	The correct solution is given.

### 2-point Items: #1, 4, 5, 7, 8, 9, 10, 12

Items that are each worth two points consist primarily of Depth of Knowledge Level 2 items considered “Basic Skills and Concepts”. Students may earn partial credit on items when showing progress on a solution pathway that connects to the concept being assessed. Students can earn either 0, 1 or 2 points for items in this category.

0 points	1 point	2 points
An incorrect solution is given with no work or with work that does not show understanding of the concept	Progress is made towards a correct solution, but minor errors have been made. OR The correct solution is given without necessary supporting work.	The correct solution is given and is supported by necessary work or explanation.

### 3-point Items: #6, 11, 13

Items that are each worth three points consist primarily of Depth of Knowledge Level 3 items considered “Strategic Thinking”. Students may earn partial credit on items when showing progress on a solution pathway that connects to the concept being assessed with one or more errors. Students can earn either 0, 1, 2 or 3 points for items in this category.

0 points	1 point	2 points	3 points
An incorrect solution is given with no work or with work that does not show understanding of the concept	Progress is made towards a correct solution, but multiple errors have been made. OR A correct solution is given with no supporting work or explanation.	Progress is made towards a correct solution, but one small error is made. OR A correct solution is given with partial supporting work provided.	The correct solution is given and is supported by necessary work or explanation.

### Total Points Possible: 27

Not Yet Met	Nearly Meets	Meets	Exceeds
0-16	17-18	19-24	25-27