

# 1.3 Proportional Graphs

# PRACTICE

In each graph, determine if  $y$  is proportional to  $x$ . Explain why or why not.

1.

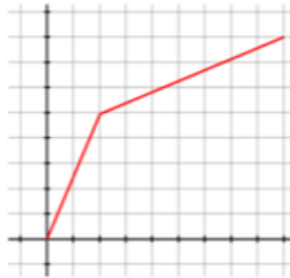


Proportional? YES or NO

Explanation:

straight line  
through the origin

2.



Proportional? YES or NO

Explanation:

not straight line

3.

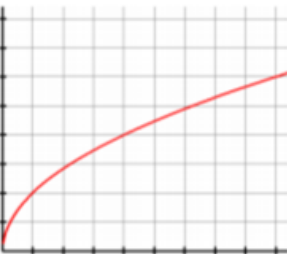


Proportional? YES or NO

Explanation:

not through  
the origin

4.

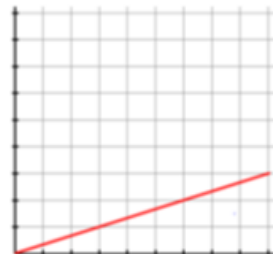


Proportional? YES or NO

Explanation:

not straight line

5.

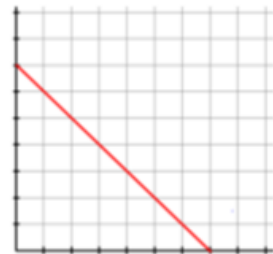


Proportional? YES or NO

Explanation:

straight line  
through the origin

6.



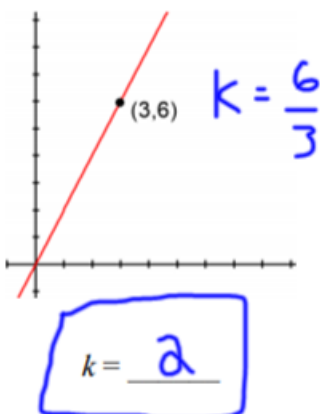
Proportional? YES or NO

Explanation:

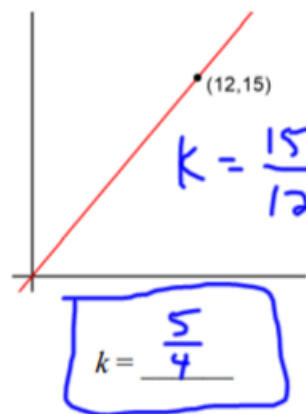
not through  
the origin

Find the constant of proportionality (unit rate). Express as fraction in simplest form.

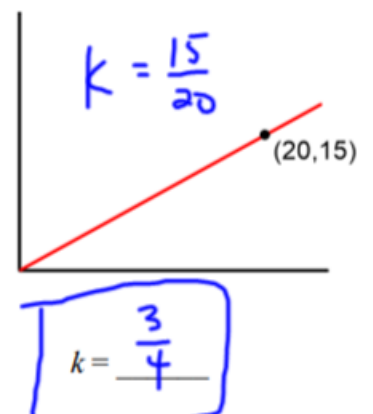
7.



8.

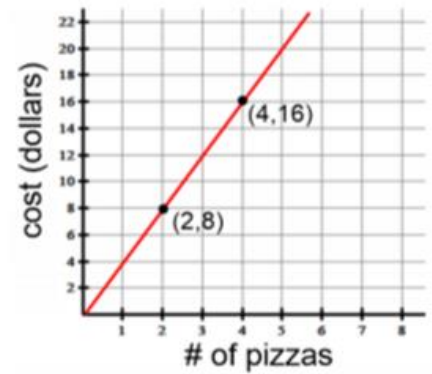


9.



Use the graph answer the questions.

10. Mr. Kelly loves the school lunch pizza from the cafeteria. The graph shows the costs of the cafeteria pizza.



- a. Find the constant of proportionality.  $k = \frac{16}{4} = \frac{8}{2} = 4$
- b. Use a sentence to explain what the constant of proportionality means in this situation.

It costs 4 dollars per pizza.

- c. Fill in the table.
- d. Explain what the point (2,8) means in this situation.

Pizzas (#)	Cost (dollars)
1	4
2	8
3	12
4	16
5	20

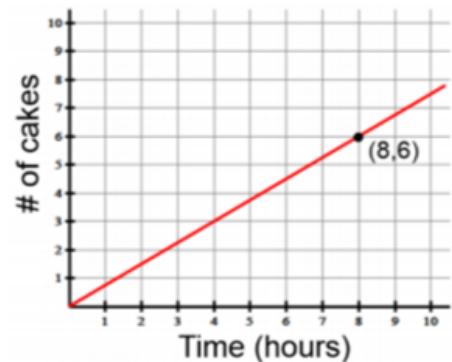
2 pizzas cost 8 dollars

- e. Circle the point below that represents the unit rate in this situation.

(0,0) (1,4) (2,8) (4,16)

$k = \frac{4}{1}$

11. Mr. Sullivan loves to bake cakes (Sully Cakes). The graph shows how many cakes Sully bakes.



- a. Find the constant of proportionality.  $k = \frac{6}{8} = \frac{3}{4}$  or 0.75
- b. Use a sentence to explain what the constant of proportionality means in this situation.

Sully bakes 0.75 cakes per hour.

- c. Fill in the table.
- d. Explain what the point (8,6) means in this situation.

Time (hours)	Cakes (#)
0	0
1	0.75
4	3
8	6

In 8 hours Sully bakes 6 cakes.

- e. How many cakes will Sully bake in 12 hours?

$12(0.75) = 9 \text{ cakes}$

$12 \rightarrow 9$