

1.4 Proportional Equations Intro

NOTES

MATH 7

Write your questions here!

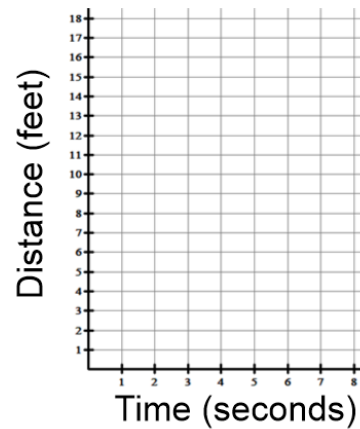


VERBAL: Pacman traveled 18 feet every 6 seconds.

TABLE

| Time (seconds) | Distance (feet) |
|----------------|-----------------|
| 0 | |
| 1 | |
| 2 | |
| 10 | |
| | 24 |

GRAPH



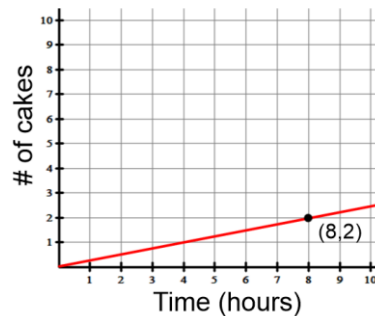
EQUATION

Write an equation from a...

TABLE

| x | y |
|-----|-----|
| 2 | 10 |
| 8 | 40 |
| 7 | 35 |
| 11 | 55 |

GRAPH



VERBAL

Batman catches 5 villains every 3 days.

EQUATION

Mr Sullivan is making protein shakes for lunch. The equation relates the amount of scoops of protein powder used for glasses made.

$$p = 4g$$

- Find the constant of proportionality.
- Explain what it means in this situation.

SUMMARY:

Now, summarize your notes here!



In the following tables y is proportional to x . Write an equation that relates y to x .

1.

| x | y |
|-----|-----|
| 2 | 8 |
| 5 | 20 |
| 7 | 28 |
| 11 | 44 |

2.

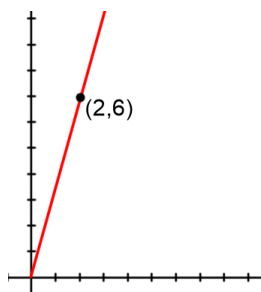
| x | y |
|-----|-----|
| 10 | 4 |
| 7.5 | 3 |
| 15 | 6 |
| 25 | 10 |

3.

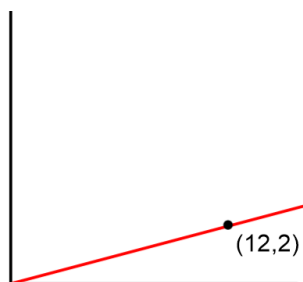
| x | 0 | 4 | 8 | 24 |
|-----|---|---|---|----|
| y | 0 | 3 | 6 | 18 |

Use the graph to write an equation that relates y to x .

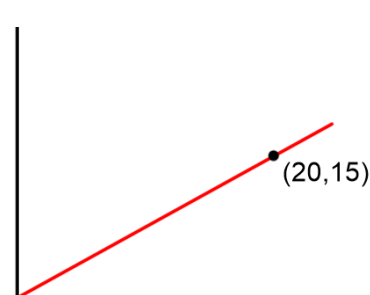
4.



5.



6.



Write an equation that models the relationship. Fill in the table.

7. Johnny Appleseed plants 21 apple trees in 3 hours.

| Time (hours) | Trees Planted |
|--------------|---------------|
| 0 | |
| 3 | |
| 5 | |

8. Johnny sells 12 glasses of apple juice every 6 minutes.

| Time (minutes) | Glasses Sold |
|----------------|--------------|
| 1 | |
| 6 | |
| | 28 |

9. Apples cost \$6.75 for 3 pounds.

| Apples (pounds) | Cost (dollars) |
|-----------------|----------------|
| 0 | |
| 1 | |
| 2 | |

State the constant of proportionality (unit rate) for each equation.

10. $y = 6x$

$k = \underline{\hspace{2cm}}$

11. $y = \frac{4}{3}x$

$k = \underline{\hspace{2cm}}$

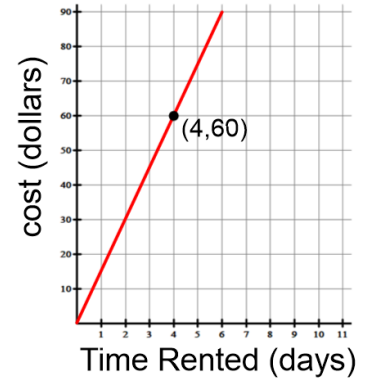
12. $y = 2.75x$

$k = \underline{\hspace{2cm}}$

Use the graph to answer the questions.

13. Mr. Bean normally drives a scooter. He rents a car to go on vacation.

- Find the constant of proportionality. $k = \underline{\hspace{2cm}}$
- Write an equation that models the relationship between days the car is rented and cost.
- Use a sentence to explain what the constant of proportionality means in this situation.



- Fill in the table.
- Explain what the point (4, 60) means in this situation.

| Time (days) | Cost (dollars) |
|-------------|----------------|
| 1 | |
| 2 | |
| 3 | |
| 12 | |

Use the table to answer the questions.

14. Booster club is selling Championship T-shirts. The money made is proportional to the t-shirts sold.

| | | | | |
|--------------------------|---|----|-----|---|
| T-shirts sold (#) | 1 | | 8 | 9 |
| Money made (\$) | | 88 | 176 | |

- Fill in the table.
- Write an equation that models the relationship between t-shirts sold and money made.

$$m = \underline{\hspace{2cm}} t$$

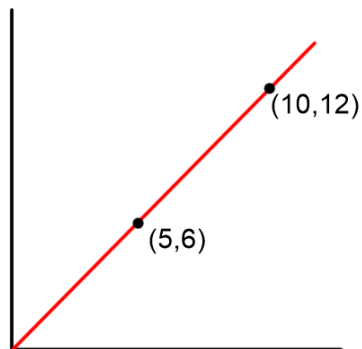
- How much does the booster club make from selling 1 shirt?
- If the booster club makes \$374 from selling championship t-shirts, how many shirts did they sell?

Write an equation that relates y to x .

1.

| x | y |
|-----|-----|
| 2 | 8 |
| 5 | 20 |
| 7 | 28 |
| 11 | 44 |

2.

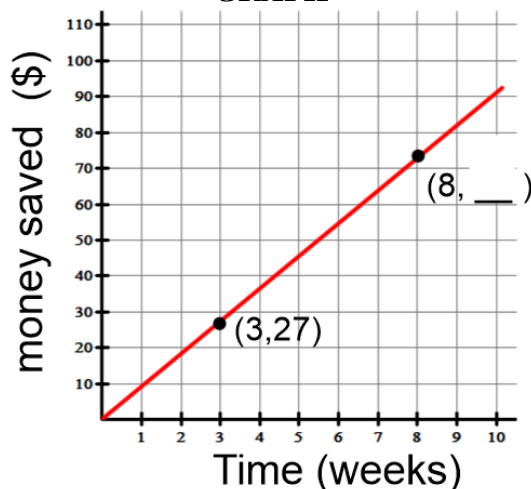


3. Mr. Kelly is saving his money all summer to buy a new pair of Airpods. The money he saves is proportional to time. Fill in the missing blanks and answer the questions.

TABLE

| Time (weeks) | Money Saved (dollars) |
|--------------|-----------------------|
| 1 | |
| 5 | |
| 7.5 | |
| | 108 |

GRAPH



EQUATION

$$m = \underline{\hspace{2cm}} w$$

VERBAL

Mr. Kelly saves dollars per week.

- How much money will Mr. Kelly have saved in 10 weeks?
- How long will it take for Mr. Kelly to save up for Airpods that cost \$220?

EXIT TICKET –

Neptune loves to swim. He swims 9 laps in 2 minutes.

SELECT ALL equation(s) that represent Neptune, where l is laps and m is minutes?

A

$$l = 0.\bar{2}m$$

B

$$l = 4.5m$$

C

$$l = \frac{9}{2}m$$

D

$$l = \frac{2}{9}m$$