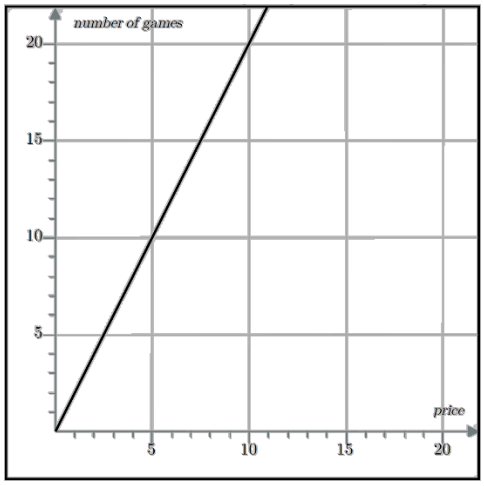
Name _____ **Math 7: Graphs and Equations of Proportional Relationships**

1. The price for playing arcade games is shown in the graph. _____

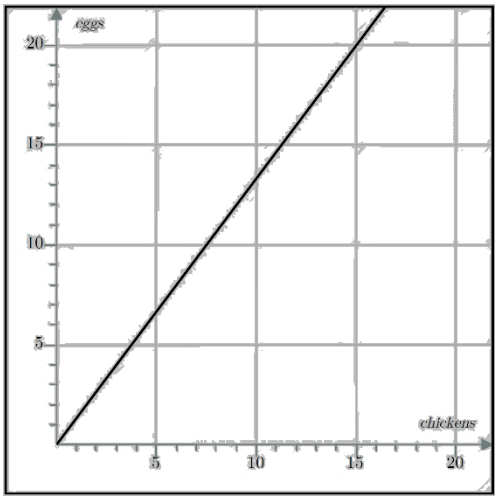


What does the point $(2, 4)$ represent on the graph?

A) 2 games cost $4

B) 4 games cost $2

2. Farmer Joe's chickens produce a number of eggs each day. _____

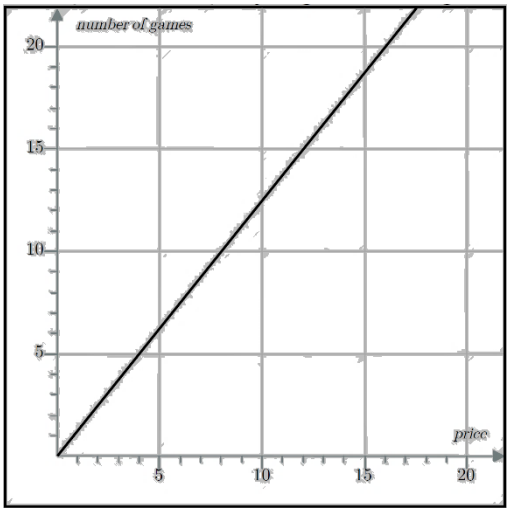


What does the point $(3, 4)$ represent on the graph?

A) 3 chickens produce 4 eggs a day

B) 4 chickens produce 3 eggs a day

3. The price for playing arcade games is shown in the graph. _____

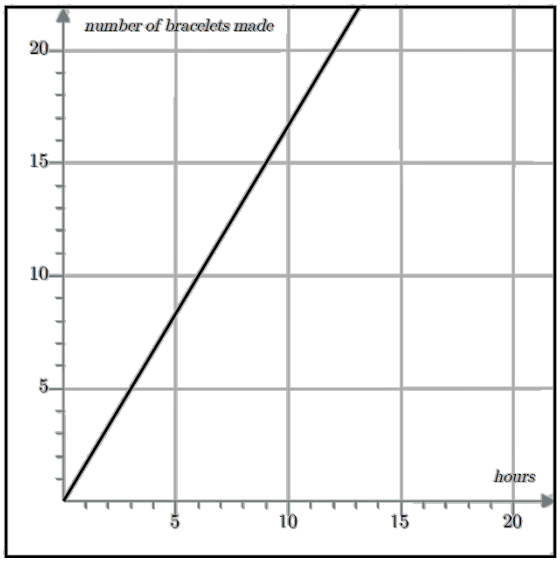


What does the point $(4, 5)$ represent on the graph?

A) 4 games cost $5

B) 5 games cost $4

4. The amount of time it takes Judy to make bracelets is graphed. _____



Which of the following statements is true?

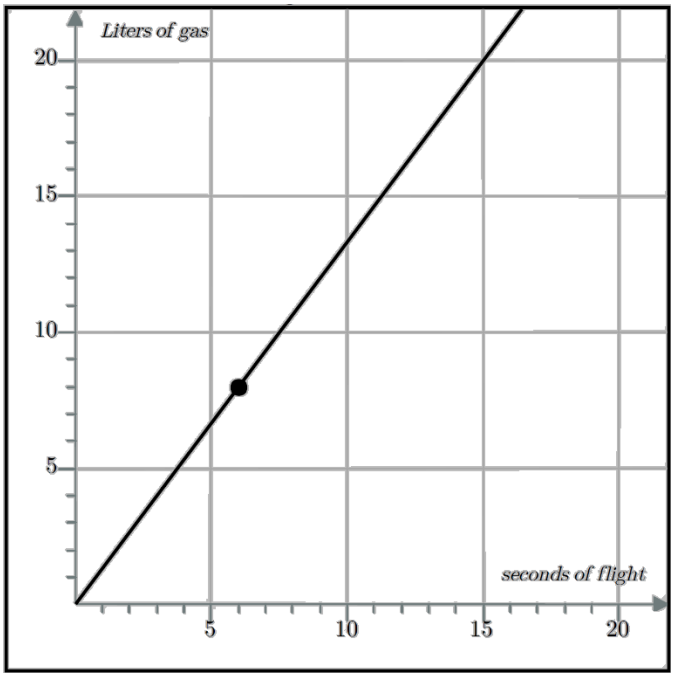
A) Judy makes 5 bracelets every 3 hours.

B) Judy makes 6 bracelets every 10 hours.

C) Judy makes 5 bracelets every 5 hours.

D) Judy makes 3 bracelets every 5 hours.

5. The number of liters of gas used by a fighter jet over a certain number of seconds is shown in the graph. _____

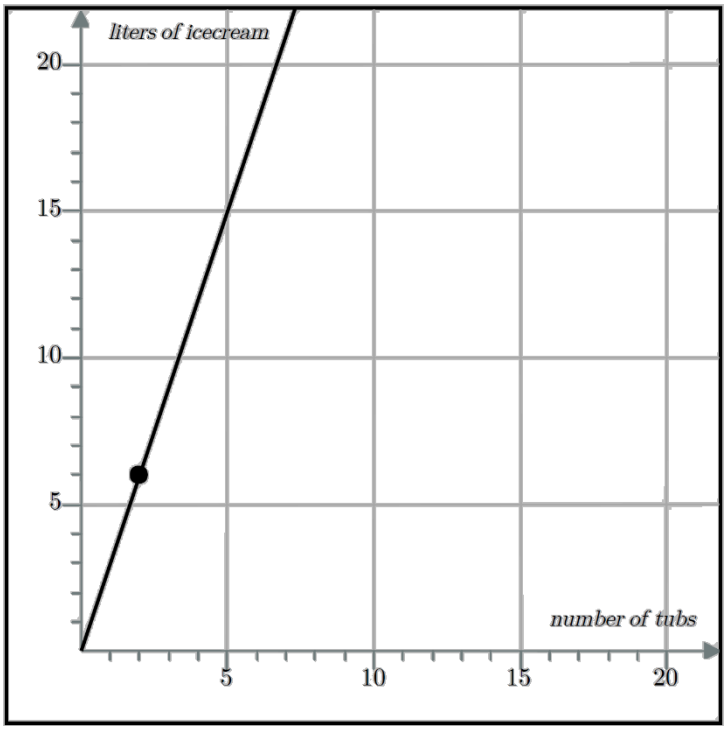


What does the point on the graph represent?

A) 6 liters of gas are used every 8 seconds.

B) 8 liters of gas are used every 6 seconds.

6. The amount ice cream in a number of tubs is graphed below. _____

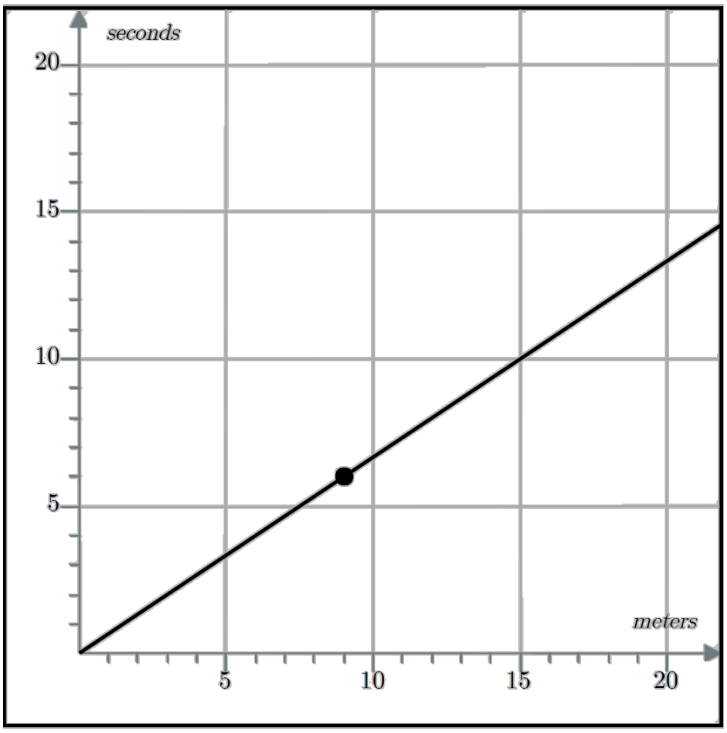


What does the point on the graph show?

A) 2 liters of ice cream is packed into 6 tubs.

B) 6 liters of ice cream is packed into 2 tubs.

7. Christa has created a mini robot, and has measured how quickly it travels. _____

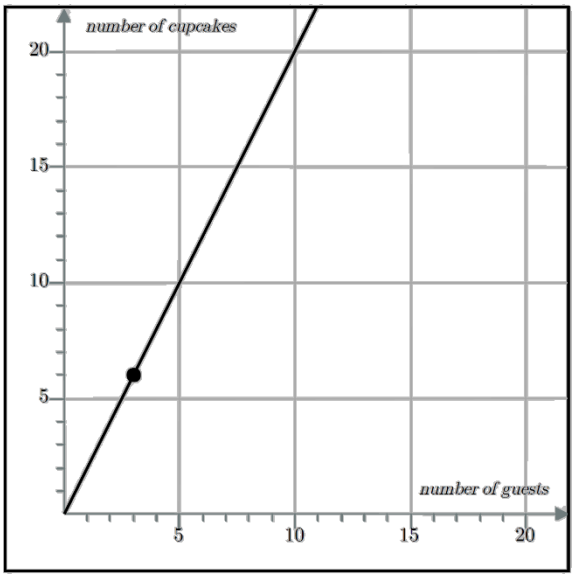


What does the point on the graph show?

A) In 9 seconds the robot travels 6 meters.

B) In 6 seconds the robot travels 9 meters.

8. The number of cupcakes eaten at a party is shown below. _____



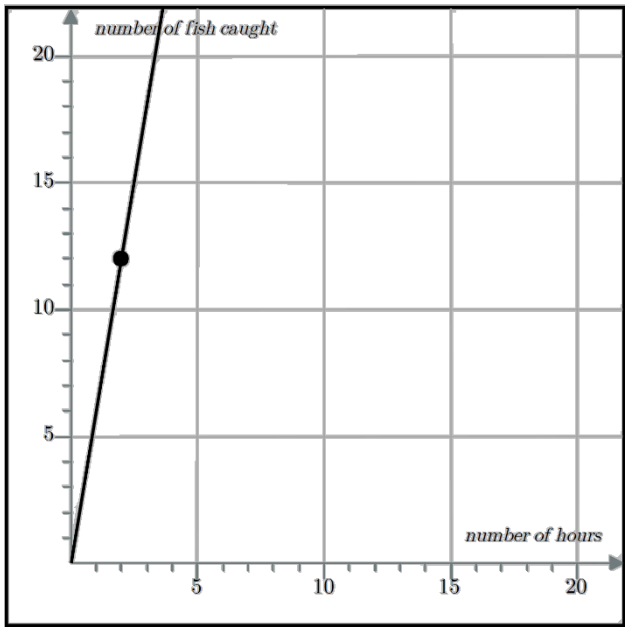
a. What does the point on the graph represent?

A) 3 cupcakes are eaten by 6 guests.

B) 6 cupcakes are eaten by 3 guests.

b. Eileen is having a party and expects to have 10 guests. According to the rate shown on the graph, how many cupcakes should she buy? _____

9. The number of fish caught by Harry last weekend is shown. _____



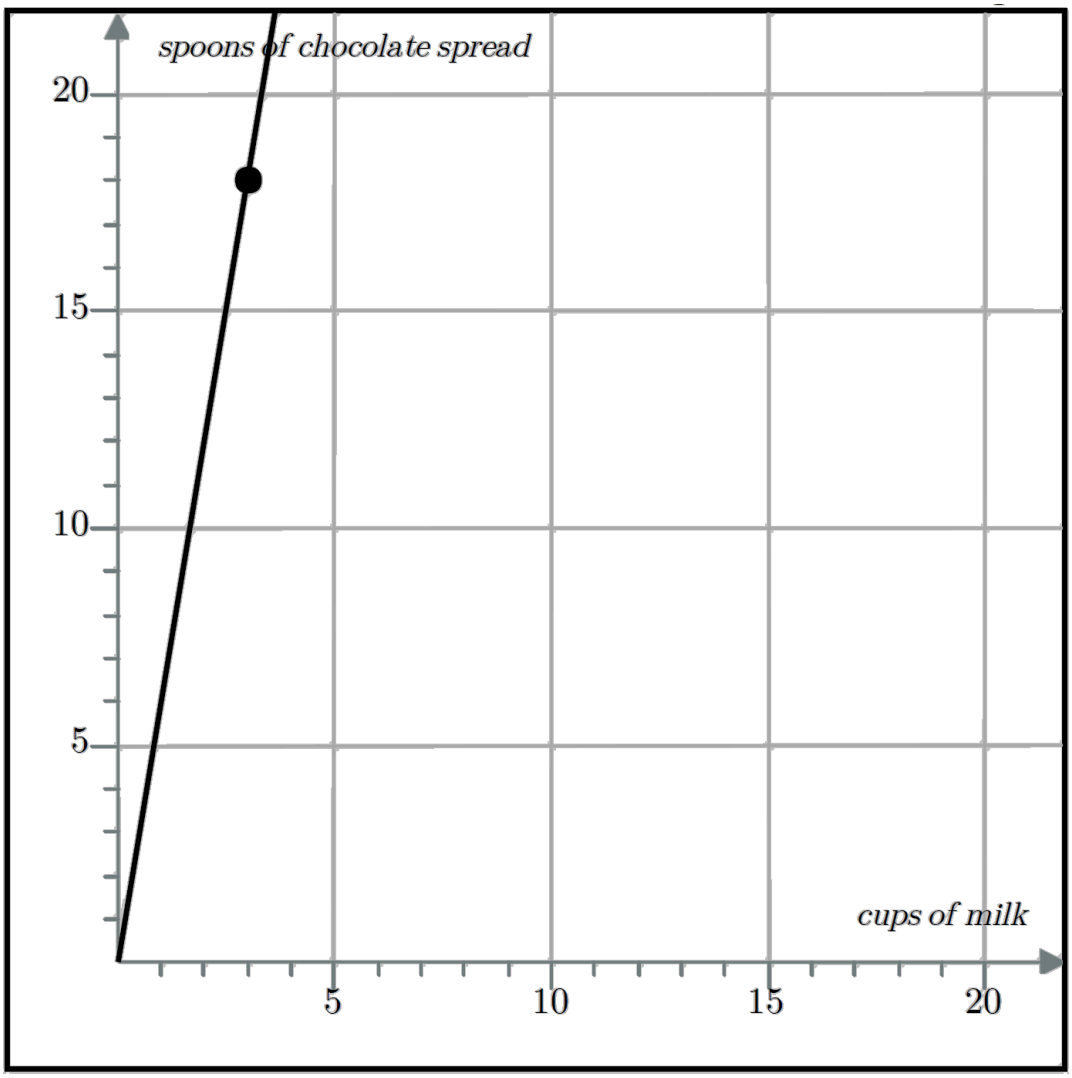
a. What does the point on the graph represent?

A) 2 fish were caught in 12 hours.

B) 12 fish were caught in 2 hours.

b. How many fish would Harry expect to catch in 1 hour? _____

10. The amount of chocolate and milk that can be heated up together to make a hot chocolate is shown in the graph.



a. What does the point on this graph show? _____

A) 18 spoons of chocolate should be heated with 3 cups of milk.

B) 3 spoons of chocolate should be heated with 18 cups of milk.

b. According to this relationship, plot a point on the graph above that represents how many spoons of chocolate should be mixed with 1 cup of milk.

11. The cost of parking for various amounts of time was recorded at four different locations in the city. You are trying to determine if y is proportional to x.

Number of hours (x)	Cost of parking (y)
3	\$10.50
3.5	\$13.25
10	\$35.00
6	\$19.50

a. At the location where parking cost \$19.50, what was the cost per hour? Give your answer to the nearest cent. _____

b. Is x proportional to y? (*Yes* or *No*) _____

12. The original of a printed image measures 6.5 centimeters in width and 26 centimeters in length. When a customer wants to print a copy of this original they are offered prints in various sizes, but the width and length need to be in the same ratio as the original so the photo does not appear distorted.

a. If x represents the width and y represents the length of the printing size, complete the equation relating x and y.

$$y = \_\_\_\_\_\ x$$

b. You make a copy of a photograph with a width of 13 cm. What would the length of the copy be? _____

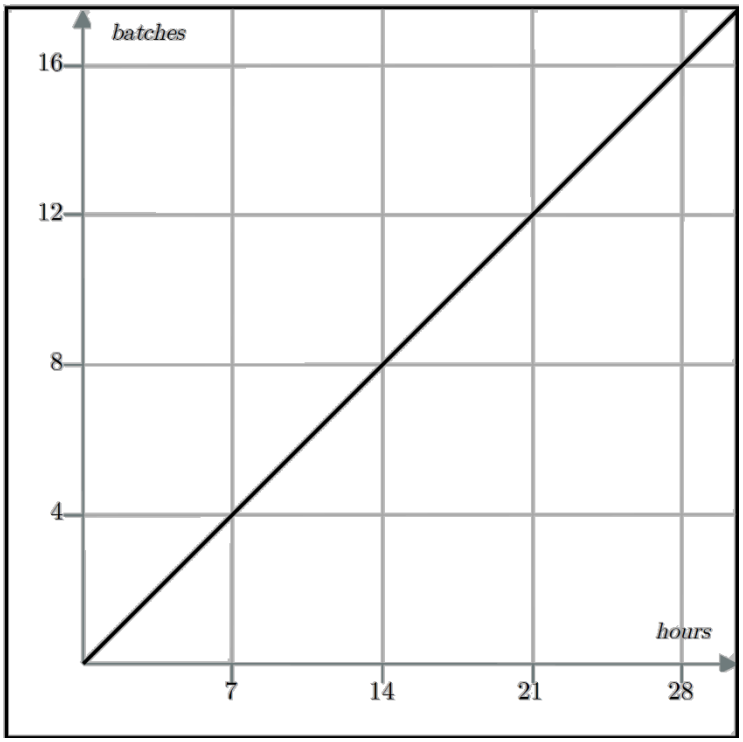
13. For every 4 minutes that Beth runs, she covers 952 meters.
Let y represent the distance Beth runs in x minutes.
Construct an equation relating x and y.
Leave your constant as a fraction if necessary.

_____

14. Glen serves 4 cups of coffee every 6 minutes. Using y for the number of cups of coffee and x for the number of minutes that have passed, write an equation that represents this proportional relationship.
Leave your constant as a fraction if necessary.

_____

15. The number of batches of cookies that can be made in a bakery every hour is shown in the graph below. What is the equation of this line?
Leave your constant as a fraction if necessary.



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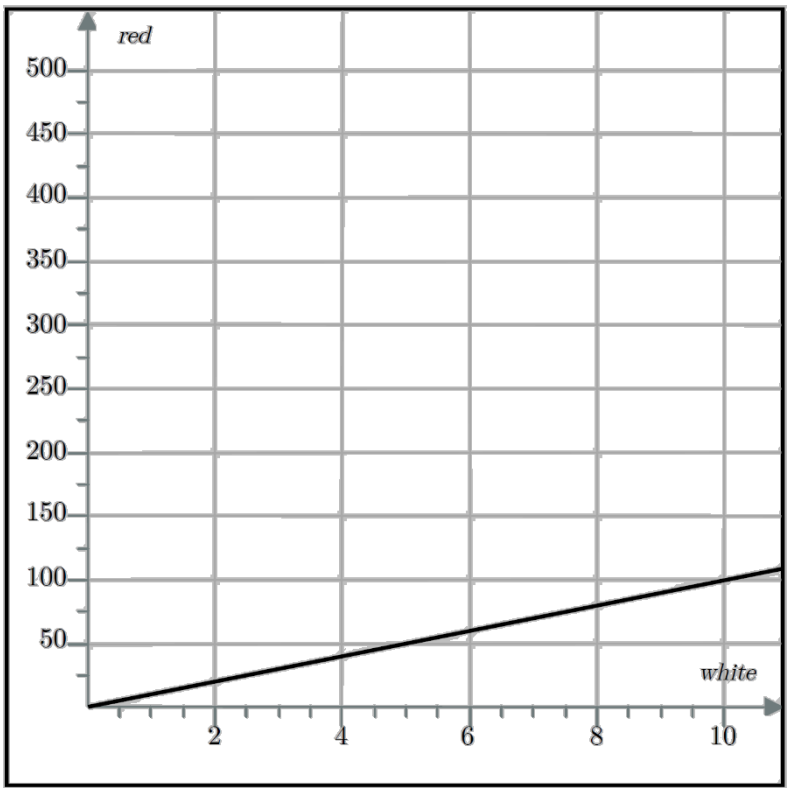
16. The amount of white and red paint needed to make 'Flamingo Pink' is shown in the graph below.



a. Let x represent the amount of white paint and y represent the amount of red paint needed. What is the equation of this line?

_____

b. What does the equation of the line tell you? _____

A) 1 can of white paint requires 10 cans of red paint to make pink.

B) For every $\frac{1}{10}$ can of white paint, you need 10 cans of red paint.

C) 1 can of red paint requires 10 cans of white paint to make pink.

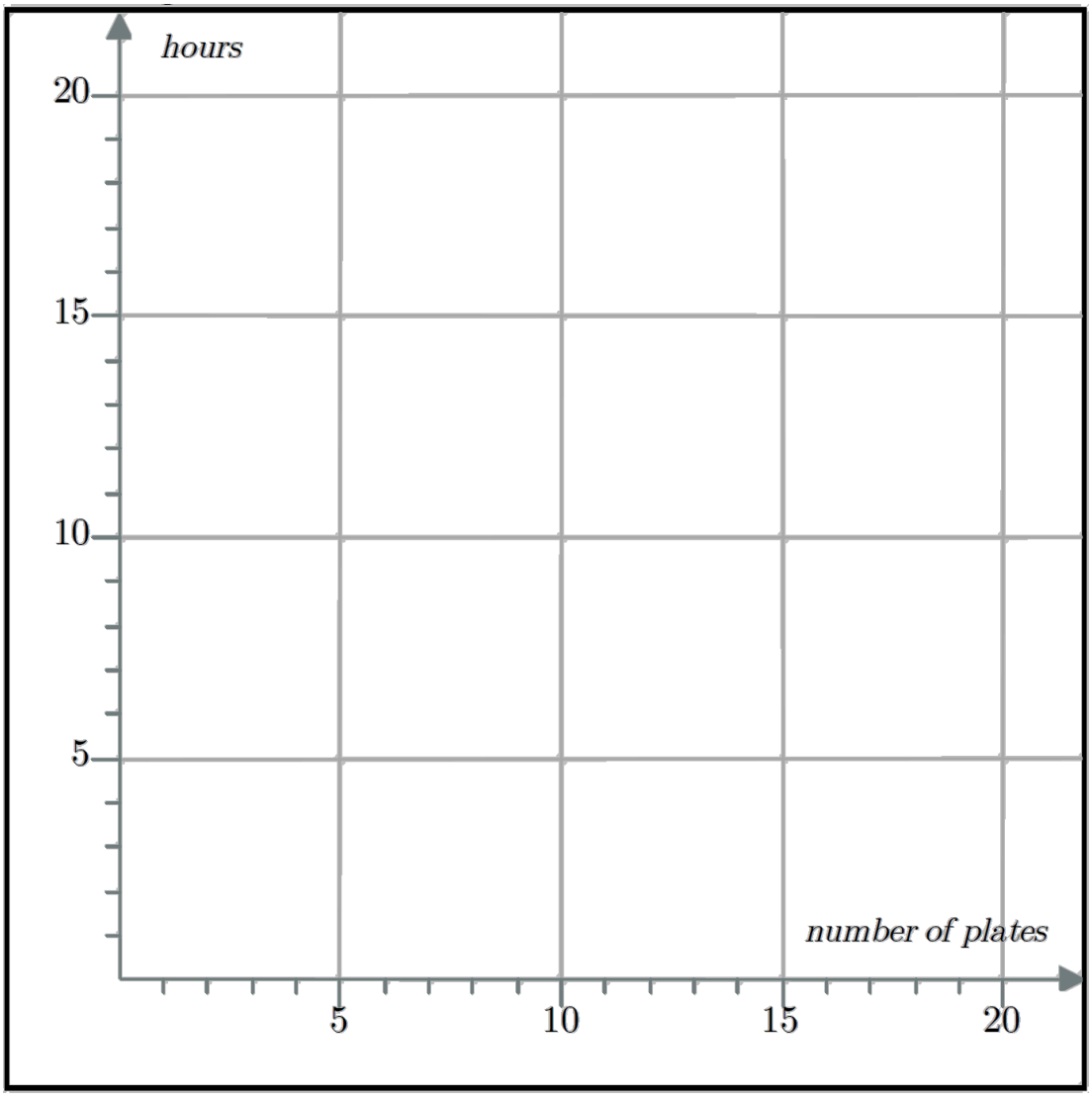
D) For every $\frac{1}{10}$ can of red paint you need to use 1 can of white paint.

17. Ivan paints 10 plates every 6 hours.

a. Complete this proportion table:

Plates Painted	0	10	20		40
Hours Worked		6	12	18	

b. Using the data from the table above, plot a graph.



18. Petrol costs a certain amount per liter. The table shows the cost of various amounts of petrol.

Number of liters (x)	0	10	20	30	40	50
Cost of petrol (y)	0	15	30	45	60	75

a. How much does petrol cost per liter? _____

b. How much would 36 liters of petrol cost at this rate? _____

c. Write an equation, using x and y, for this relationship. _____

d. In your equation, what does your constant represent? _____

A) The total cost of petrol pumped.

B) The unit rate of cost of petrol per liter.

C) The number of liters of petrol pumped.

e. Graph the equation for the table.