

## Chapter 5-5 to 5-10 Review

Previous Test Review Question - A falcon can fly at a top speed of 200mph. What is the rate in feet per second? 1 mile = 5280ft

$$\frac{200\cancel{\text{mi}}}{1\cancel{\text{hr}}} \cdot \frac{5280\text{ft}}{1\cancel{\text{mi}}} \cdot \frac{1\cancel{\text{hr}}}{60\cancel{\text{min}}} \cdot \frac{1\cancel{\text{min}}}{60\text{sec}} = \frac{1,056,000}{3600}$$
$$= 293\text{ft}/\text{sec}$$

Solve

$$\frac{2}{9} = \frac{10}{x+6}$$

$$2(x+6) = 9 \cdot 10$$

$$2x+12 = 90$$

$$\begin{array}{r} -12 \\ -12 \end{array}$$

$$\frac{2x}{2} = \frac{78}{2}$$

$$x = 39$$

## Chapter 5-5 and 5-6 Proportional and Nonproportional Relationships

Determine whether the set of numbers in each table is proportional. If the relationship is proportional, identify the constant of proportionality. Explain your reasoning.

X

Y

Number of Sandwiches	1	5	10	15	20
Cost (\$)	3	13.75	25	33.75	40

$$\frac{13.75}{5} = \frac{2.75}{1} \text{ not } \frac{3}{1}$$

Not proportional, no constant rate.

Number of Guests	2	4	6	8
Cookies	4	8	12	16

$$\frac{4}{2} = \frac{2}{1} \quad \frac{12}{6} = \frac{2}{1}$$
$$\frac{8}{4} = \frac{2}{1} \quad \frac{16}{8} = \frac{2}{1}$$

Proportional; constant is 2 to 1.

2 cookies per guest

Complete each table. Determine whether the pattern forms a proportion. If the relationship is proportional, identify the constant of proportionality.

Antonio's Pizzeria charges \$10 for a large pizza, plus \$1.50 for each additional topping.

X Number of Toppings	1	2	3	4	5
Y Cost	11.50	13.00	14.50	16.00	17.50

$$\frac{13.00}{2} = \frac{6.50}{1} \quad \text{not} \quad \frac{11.50}{1}$$

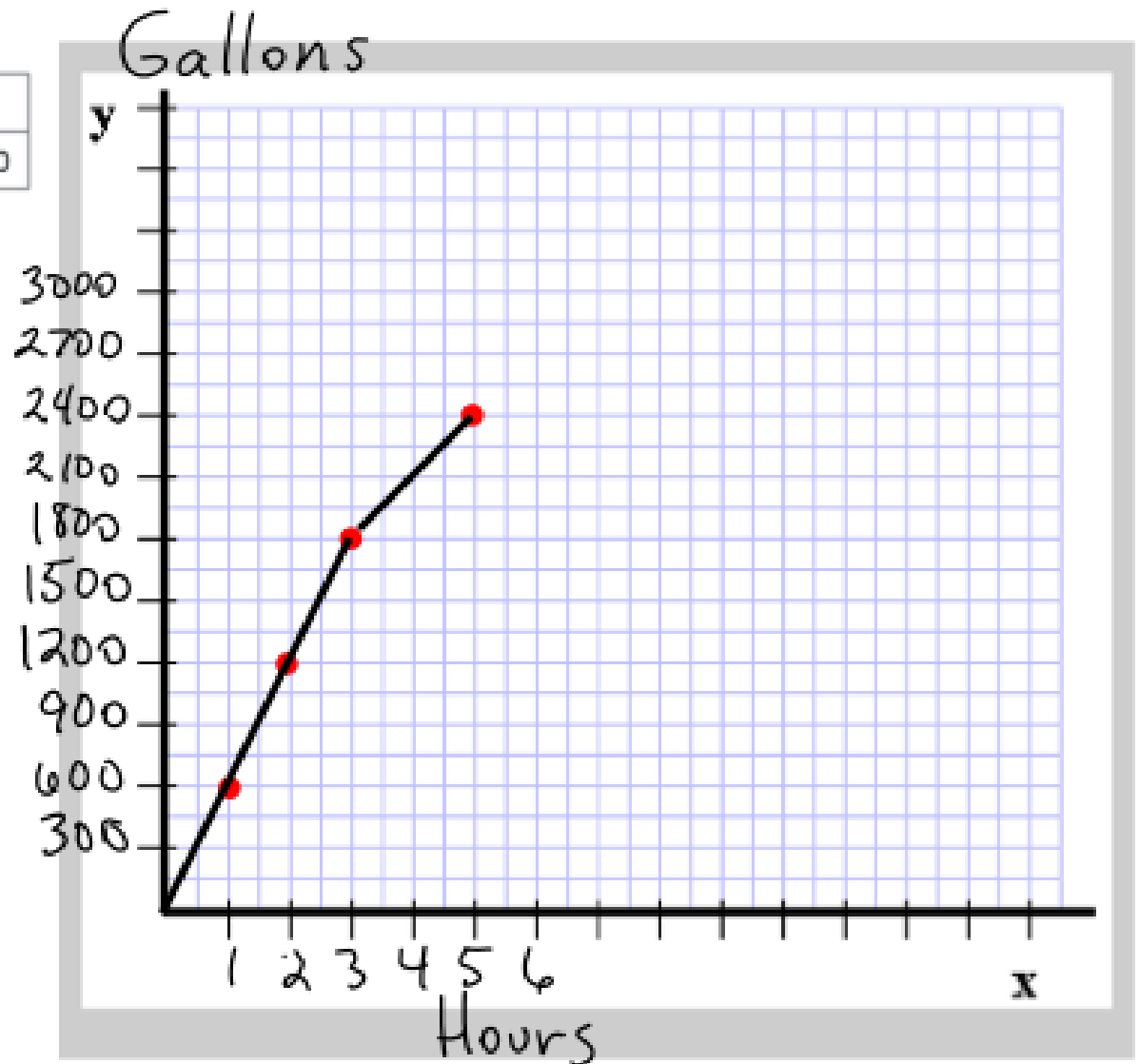
Not proportional, no constant rate.

## Chapter 5-5 and 5-6 Proportional and Nonproportional Relationships

Determine whether each relationship is proportional by graphing on a coordinate plane.  
Explain your reasoning.

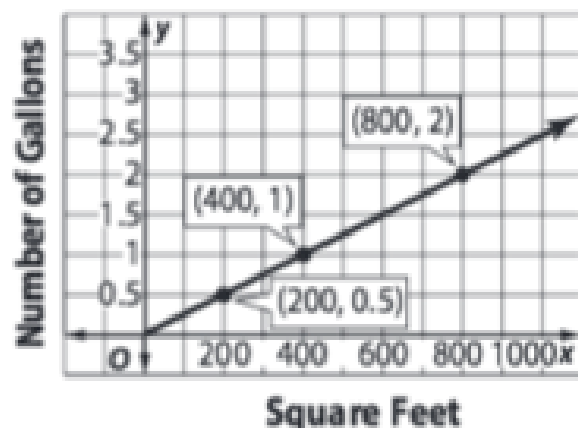
Time (hr)	0	1	2	3	5
Number of Gallons	0	600	1200	1800	2400

Not proportional, does not form a straight line.



**Find and interpret the constant of proportionality.**

The number of gallons of paint required is proportional for the number of square feet of surface to be painted. The graph shows the relationship (square feet, number of gallons).



Constant is 1 gallon = 400 square feet or 400 square feet = 1 gallon.

This means 1 gallon of paint will cover 400 square feet of wall.

During its first 50 days of growth, a sunflower grows about 4 centimeters per day. Find the constant of proportionality. Then write an equation relating height to days. After how many days will a sunflower be 60 centimeters tall?

$$\text{constant} = \frac{4\text{cm}}{1\text{day}} = \frac{4}{1}$$

equation method

$$h = 4d$$

$$\frac{60}{4} = \frac{\cancel{4}d}{\cancel{4}}$$

$$15 = d$$

proportion method

$$\frac{4}{1} = \frac{60}{d}$$

$$4d = 60$$

$$d = 15$$