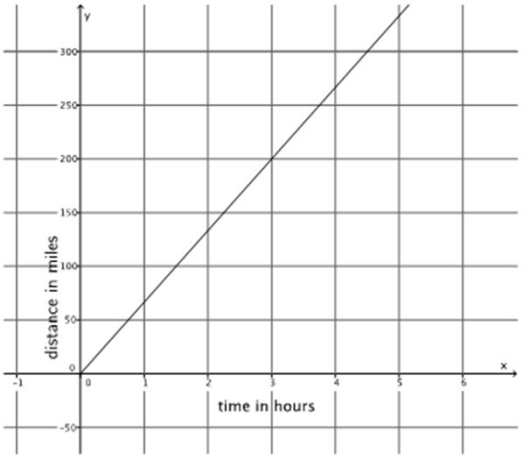
Constant Rate and Linear Equation

1. a) Train A can travel a distance of 500 miles in 8 hours. Assuming the train travels at a constant rate, write the linear equation that represents the situation.

b) The figure represents the constant rate of travel for Train B

Which train is faster? Explain.



2. a) Natalie can paint 40 square feet in 9 minutes. Assuming she paints at a constant rate, write the linear equation that represents the situation.

b) The table of values below represents the area painted by Steven for a few selected time intervals. Assume Steven is painting at a constant rate.

Who paints faster? Explain.

Minutes (x)	Area Painted (y)
3	10
5	$\frac{50}{3}$
6	20
8	$\frac{80}{3}$

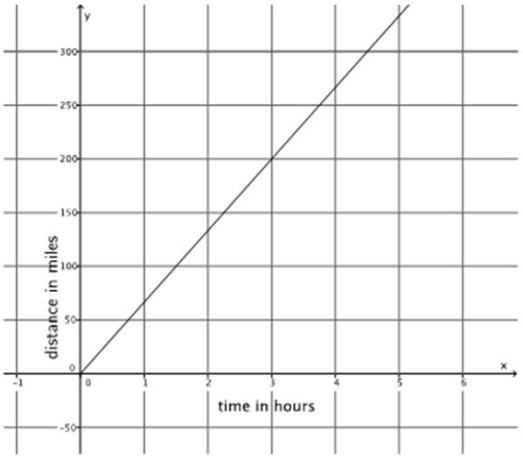
Constant Rate and Linear Equation

1. a) Train A can travel a distance of 500 miles in 8 hours. Assuming the train travels at a constant rate, write the linear equation that represents the situation.

Let y represent the total number of miles Train A travels in x minutes. We can write $\frac{y}{x} = \frac{500}{8}$ and $y = \frac{125}{2}x$.

b) The figure represents the constant rate of travel for Train B

Which train is faster? Explain.



for Train A is $\frac{125}{2}$, and the slope of the line for Train B is $\frac{200}{3}$. When you compare the slopes, you see that $\frac{200}{3} > \frac{125}{2}$.

2. a) Natalie can paint 40 square feet in 9 minutes. Assuming she paints at a constant rate, write the linear equation that represents the situation.

Let y represent the total square feet Natalie can paint in x minutes. We can write $\frac{y}{x} = \frac{40}{9}$, and $y = \frac{40}{9}x$.

b) The table of values below represents the area painted by Steven for a few selected time intervals. Assume Steven is painting at a constant rate.

Who paints faster? Explain.

Minutes (x)	Area Painted (y)
3	10
5	$\frac{50}{3}$
6	20
8	$\frac{80}{3}$

Natalie paints faster. Using the table of values, I can find the slope that represents Steven's constant rate of painting: $\frac{10}{3}$. The slope or rate for Natalie is $\frac{40}{9}$. When you compare the slopes, you see that $\frac{40}{9} > \frac{10}{3}$.