

p232  
30.
$$\frac{\text{rise}}{\text{run}}$$

$$\frac{-4\frac{1}{5}}{3}$$

$$\frac{-\frac{21}{5}}{3}$$

$$-\frac{\cancel{21}^7}{5} \cdot \frac{1}{\cancel{3}_1}$$

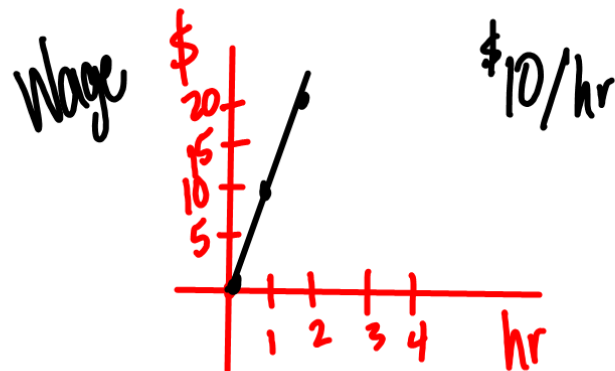
$$-\frac{7}{5}$$

## 5.3 Rate of Change Slope

$$\frac{200 \text{ miles}}{20 \text{ min}}$$

$$\frac{10 \text{ miles}}{1 \text{ min}}$$

$$\frac{60 \text{ miles}}{1 \text{ hour}}$$



# Direct Variation

$$d = rt$$

$$d = 75t$$

75 constant

$t$	$d$
0	0
1	75
2	150
3	225
4	300

Direct Variation

$$y = kx$$

$$d = rt$$

$$A = lw$$

$k$  constant of variation

constant of proportionality

$$y = 14 \text{ when } x = 2$$

Find  $k$ , write equation

Use equation

$$\text{Substitute } y = kx$$

$$14 = k(2)$$

Solve

$$14 = 2k$$

$$7 = k$$

Write equation

$$y = 7x$$

$$y = 10 \text{ when } x = 5$$

$$y = kx$$

$$10 = k(5)$$

$$10 = 5k$$

$$2 = k$$

constant of variation

$$y = 2x$$

direct variation equation

x	y
0	0
1	2
2	4
3	6
4	8

$$\frac{2}{1}$$

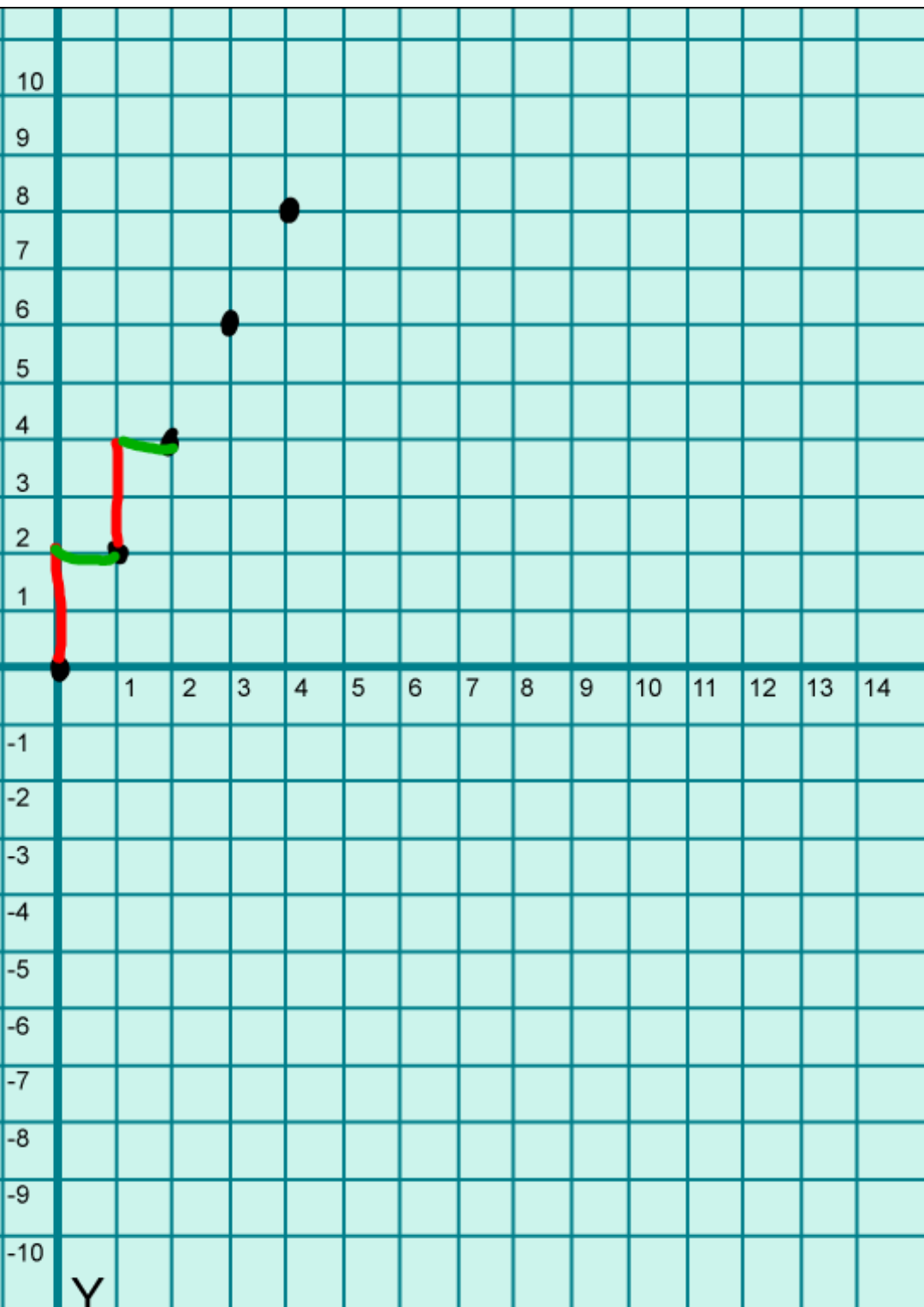
$$y = 2x$$

X

-14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 1 2 3 4 5 6 7 8 9 10 11 12 13 14

10  
9  
8  
7  
6  
5  
4  
3  
2  
1  
-1  
-2  
-3  
-4  
-5  
-6  
-7  
-8  
-9  
-10

Y



$$y = 14 \text{ when } x = 2$$

$$\text{Find } x \text{ when } y = 21$$

Substitute

$$y = kx$$

Find k

$$14 = k(2)$$

$$\frac{14}{2} = \frac{2k}{2}$$

$$7 = k$$

Proportion

$$\frac{14}{2} = \frac{21}{x}$$

$$\frac{7}{1} = \frac{21}{x}$$

Write equation

$$y = 7x$$

Substitute

$$21 = 7x$$

Solve for x

$$3 = x$$

$$7x = 21(1)$$

$$\frac{7x}{7} = \frac{21}{7}$$

$$x = 3$$

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