5.3 Direct Variation

Rate of Change

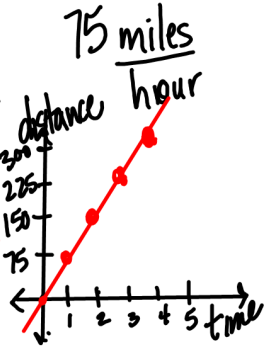
$d = rt$

$d = 75t$

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

1 < 1 < 1

75 miles / hour



$y = kx$ Direct Variation

$d = 75t$ k constant of variation, constant of proportionality

$\frac{1}{75} = \frac{2}{150}$

$\frac{75}{1} = \frac{150}{2}$

$\frac{y}{x} = \frac{kx}{x}$

$\frac{y}{x} = k$

y varies directly as x

$y = kx$

y is 14 when x is 7

$\frac{14}{7} = \frac{k(7)}{7}$

$2 = k$ ← Find the constant of variation

$y = 2x$ ← Write the direct variation equation

y varies directly as x

$y = kx$

y is 15 when x is 3

$\frac{15}{3} = \frac{k(3)}{3}$

$5 = k$ ← Find the constant of variation $k =$

$y = 5x$ ← Write the direct variation equation

$y = 5(2)$

$y = 10$ ← What is y when $x = 2$

$y = 15 \quad x = 3$

$y = 10 \quad x = 2$

$\frac{15}{3} = \frac{10}{2}$ (30, 30)

$12

$y = 12x$

$\frac{12}{1} = \frac{36}{3}$

p241

14-30E