

DIRECT AND INVERSE VARIATION

HOW TO IDENTIFY A DIRECT VARIATION PROBLEM:

- (a) when the problem states a direct variation exists or states that a variable is directly proportional to another variable.
- (b) by observing that if one quantity increases the other quantity increases or if one quantity decreases the other quantity decreases

HOW TO SOLVE A DIRECT VARIATION PROBLEM:

- (1) Write the two words that have numbers associated with them
- (2) Under these words write two fractions

Be careful to put the numbers of one relationship in the numerator and the numbers from the second relationship in the denominators

- (3) Set the two fractions equal to each other
- (4) Solve

1. Kim owns five shares of stock and receives \$12 per year in dividends. How many shares of stock would she need to own to receive \$24?

Shares	Dividends		
$\frac{5}{x}$	$\frac{12}{24}$	$\frac{5}{x} = \frac{12}{24}$	$(5)(24) = 12x$ ← Cross Product
			$120 = 12x$
			$10 = x$

2. W varies directly as k^2 . If $W = 75$ when $k = 5$, find W when $k = 2$.

W	k^2		
$\frac{75}{W}$	$\frac{5^2}{2^2}$	$\frac{75}{W} = \frac{25}{4}$	$(75)(4) = 25W$ ← Cross Product
			$300 = 25W$
			$12 = W$