

Directly Varies

$$\frac{y}{x} = \text{constant}$$

1.) When y varies directly as x and y=1, when x=4, find x when y=2.

$$\frac{y}{x} = \frac{1}{4} = \frac{2}{x}$$
$$1x = 8$$
$$\boxed{x = 8}$$

2.) If y varies directly as x and y=1 when x = 17, find x when y = 0.5

$$\frac{y}{x} = \frac{1}{17} = \frac{0.5}{x}$$
$$1x = 8.5$$
$$\boxed{x = 8.5}$$
$$\begin{array}{r} 0.5 \\ 17 \overline{) 85} \\ \underline{35} \\ 05 \end{array}$$

Constant

3.) If y varies directly as x and $y = 15$ when x is 4 , find x when $y = 6$.

$$\frac{y}{x} = \frac{15}{4} = \frac{6}{x}$$
$$\frac{15x}{15} = \frac{24}{15}$$

$$15 \overline{) 24.0}$$
$$\begin{array}{r} 1.6 \\ 15 \overline{) 24.0} \\ \underline{15} \\ 9.0 \\ \underline{-9.0} \\ 0 \end{array}$$

1.) Cross X
2.) \div by the # with the variable.

Constant

4.) If y varies directly as x and $y = 1$ when x is 40 , find x when $y = 4$.

$$\frac{y}{x} = \frac{1}{40} = \frac{4}{x}$$
$$1x = 160$$
$$\boxed{x = 160}$$

$$y = kx$$

5.) The variables x and y vary directly when $x = 5$ and $y = 4$. Write an equation that relates x and y.

$$\frac{y}{x} = \text{constant}$$

x	y
5	4

 $\frac{4}{5}$

$$y = \frac{4}{5}x$$

Find the constant,
then write the equation.

$$\frac{3}{4}$$

6.) The variables x and y vary directly when $x = 3$ and $y = 9$. Write an equation that relates x and y.

*I you
can get a
whole # $\div \frac{3}{3} \sqrt{9}$

$$\frac{x}{y} = \frac{9}{3} = 3 \quad k=3$$

$$y = 3x$$