

### Direct Variation

Directions: All the values in the table below vary directly. Find the constant of variation.

1.  $x = 200$  and  $y = 8$

$$\frac{y}{x} = \frac{8}{200}$$

$$k = \frac{8}{200}$$

2.  $x = 50$  and  $y = 4$

$$\frac{y}{x} = \frac{4}{50}$$

$$k = \frac{4}{50}$$

3.  $x = 120$  and  $y = 12$

$$\frac{y}{x} = \frac{12}{120}$$

$$k = \frac{1}{10}$$

4. A bank offers interest that has a variable rate. Identify the independent variable, represent the relationship between the variables as a function, and find the constant of variation.

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1	2	3	4	5
10	20	30	40	50

$$\frac{y}{x} = \frac{10}{10} = 1$$

$$\frac{y}{x} = \frac{20}{20} = 1$$

$$\frac{y}{x} = \frac{30}{30} = 1$$

$$\frac{y}{x} = \frac{40}{40} = 1$$

$$\frac{y}{x} = \frac{50}{50} = 1$$

$$k = 1$$

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1	2	3	4	5
10	20	30	40	50

$$\frac{y}{x} = \frac{10}{10} = 1$$

$$\frac{y}{x} = \frac{20}{20} = 1$$

$$\frac{y}{x} = \frac{30}{30} = 1$$

$$\frac{y}{x} = \frac{40}{40} = 1$$

$$\frac{y}{x} = \frac{50}{50} = 1$$

$$k = 1$$

5. The variables in the table below vary directly. Write the function that relates the variables and find the constant variation in the table.

1	2	3	4	5
10	20	30	40	50

$$\frac{y}{x} = \frac{10}{10} = 1$$

$$\frac{y}{x} = \frac{20}{20} = 1$$

$$\frac{y}{x} = \frac{30}{30} = 1$$

$$\frac{y}{x} = \frac{40}{40} = 1$$

$$\frac{y}{x} = \frac{50}{50} = 1$$

$$k = 1$$

6. In the relationship between the variables below is direct variation? Write the function that relates the variables.

$$y = 2x$$

$$k = 2$$

7. Three directly vary. If  $x = 10$  then  $y = 20$  and if  $x = 20$  then  $y = 40$ .

10	20	30	40	50
20	40	60	80	100

$$\frac{y}{x} = \frac{20}{10} = 2$$

$$\frac{y}{x} = \frac{40}{20} = 2$$

$$\frac{y}{x} = \frac{60}{30} = 2$$

$$\frac{y}{x} = \frac{80}{40} = 2$$

$$\frac{y}{x} = \frac{100}{50} = 2$$

$$k = 2$$

constant of variation