

5.5 Linear Functions: Part II

In the table y varies directly as x.

X	Y
1	3
3	9
4 $\times 3$	12
6	18
8	24

a) By what number is each x-value multiplied to give the corresponding y - value?

3

Complete the table

b) Write the equation relating x and y.

$$y = 3 \cdot x$$

c) What is the constant of proportionality?

Slope = 3

Nov 6-3:52 PM

Suppose the distance a car travels at a certain speed is expressed as a function of the volume of fuel used. The equation is $d = 12.5l$, where d represents the distance in kilometres and l represents the volume of fuel in litres.

Suppose the car uses 6.5 L of fuel. How far does it travel?

$$d = 12.5(6.5)$$

$$d = \underline{81.25 \text{ km}}$$

Suppose the car travels 100km. How much fuel does it use?

$$100 = 12.5l$$

$$\frac{100}{12.5} = \frac{12.5l}{12.5}$$

$$l = \underline{8 \text{ L}}$$

Nov 6-4:00 PM

The amount of simple interest charged on a loan varies directly as the amount of money borrowed. A person borrowed \$1980 and paid \$188.10 interest. How much interest would be charged on a \$1500 loan at the same rate?

Varies directly: As one quantity increases or decreases so does the second quantity.

Hint: Set up a proportion.

$$\frac{1980}{188.10} = \frac{1500}{x}$$

$$1980x = 1500(188.10)$$

$$x = \frac{1500(188.10)}{1980}$$

$$x = \$742.50$$

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$$\frac{1980}{188.10} = k$$

$$10.53 = k$$

$$\frac{1500}{x} = k$$

$$\frac{1500}{x} = 10.53$$

$$x = \frac{1500}{10.53} = \$742.50$$

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