Direct Variation

A relationship between two variables in which one variable is a constant multiple of the other

Dependent Variable: A variable that is affected by some other variable

Independent Variable: A variable that affects the value of another variable

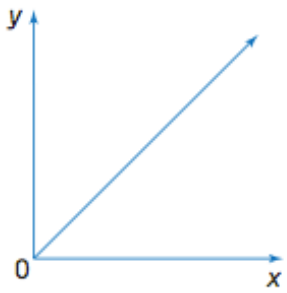
Equation: $y = mx$

m is the constant of variation

(It may also be referred to as a rate of change, variable cost, or slope)

$$m = rate\ of\ change = \frac{\Delta dependent}{\Delta independent} = \frac{\Delta y}{\Delta x}$$

$$m = slope = \frac{rise}{run} = \frac{y_2 - y_1}{x_2 - x_1}$$



The graph of a direct variation is a straight line that passes through the origin. This means that the initial value is 0.

Partial Variation

A relationship between two variables in which the dependent variable is the sum of a constant number and a constant multiple of the independent variable

Dependent Variable

Independent Variable

Equation: $y = mx + b$

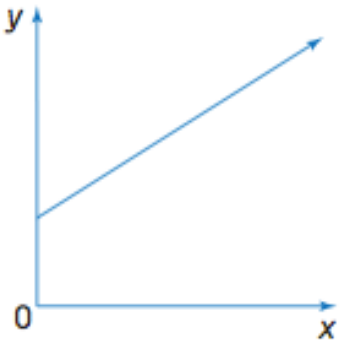
m is the constant of variation

(It may also be referred to as a rate of change, variable cost, or slope)

b is the initial value

(It may also be referred to as a fixed cost, or y – intercept)

The initial value is the value of 'y' (the dependent variable), when 'x' (the independent variable is equal to 0.



The graph of a partial variation is a straight line that does not pass through the origin. This means that the initial value is not 0.