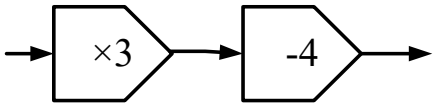
Representing Functions as Number Machines

Example

Represent the following function as a number machine: $y = 3x - 4$.



Represent the following functions as number machines.

1 $y = 5x - 7$

2 $y = 3 + 7x$

3 $y = x - 12$

4 $y = 5(x - 7)$

5 $y = \frac{x}{8} + 9$

6 $y = x \div 4$

7 $y = 9(x + 2)$

8 $y = 9x + 2$

9 $y = \frac{x}{4} - 9$

10 $y = \frac{3x+4}{5} + 12$

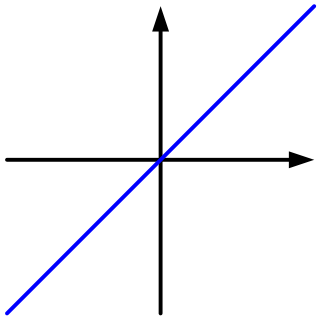
Understanding Gradient

The gradient of a graph is how steeply the line is drawn.

The general formula for a straight line graph is :

$$y=mx+c$$

where m is the gradient and c is the y-intercept.



The graph to the left has a positive gradient.

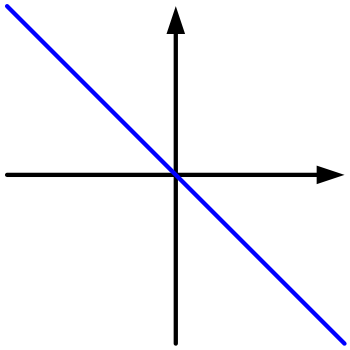
Depending on the scale of the graph, it looks like the graph has a gradient of 1.

This means that for every cm along, the graph rises by 1 cm.

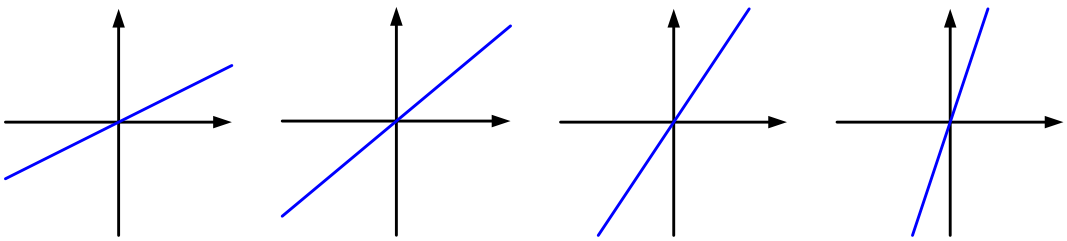
The graph to the right has a negative gradient.

Depending on the scale of the graph, it looks like the graph has a gradient of -1.

This means that for every cm along, the graph drops by 1 cm.



Look at the graphs below. Some are steeper and some are less steep. The ones that are steeper have a higher gradient.



These graphs gradually get steeper from left to right. The value of m is rising with each one.