

## GRADIENT & EQUATION OF A LINE

### GRADIENT

A line that goes up hill from left to right has a positive gradient.

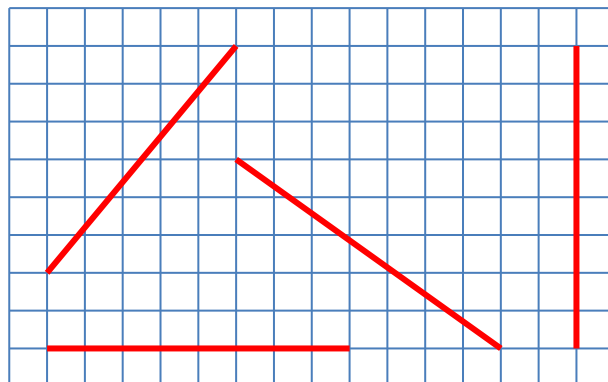
A line that goes downhill from left to right has a negative gradient.

A horizontal line has a gradient 0.

A vertical line has an undefined gradient.

Parallel lines have the same gradient.

$$\text{gradient} = \frac{\text{vertical height}}{\text{horizontal distance}}$$

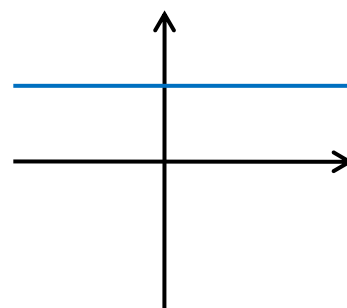


### EQUATION OF A STRAIGHT LINE

#### Horizontal Lines

A horizontal line has equation  $y = a$

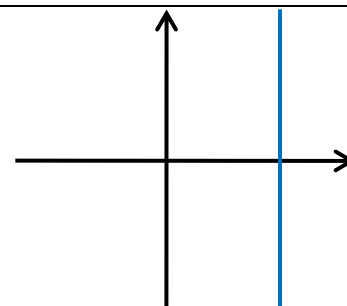
where  $a$  is the point that the line crosses the y-axis.



#### Vertical Lines

A vertical line has equation  $x = b$

where  $b$  is the point that the line crosses the x-axis.

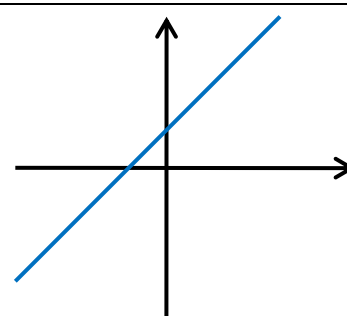


#### Diagonal Lines

The equation of a diagonal line can be found using the formula:

$$y = mx + c$$

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



## Gradient & Equation of a Line Practice

[http://www.cimt.plymouth.ac.uk/projects/mepres/book9/bk9i5/bk9\\_5i2.html](http://www.cimt.plymouth.ac.uk/projects/mepres/book9/bk9i5/bk9_5i2.html)

Revise gradient and equation of a line.

[www.supermathsworld.com](http://www.supermathsworld.com) Ask your teacher for login details.

Select ALGEBRA from the options.

Select STRAIGHT LINES 1 from the menu. Try on Easy, Medium and Hard level.

<http://www.mathsisfun.com/gradient.html>

Read about gradient. Answer the questions at the bottom of the page.

[http://www.bbc.co.uk/bitesize/standard/maths\\_ii/measure/straight\\_line\\_equation/revision/1/](http://www.bbc.co.uk/bitesize/standard/maths_ii/measure/straight_line_equation/revision/1/)

Revise equation of a line. Try the testbite.