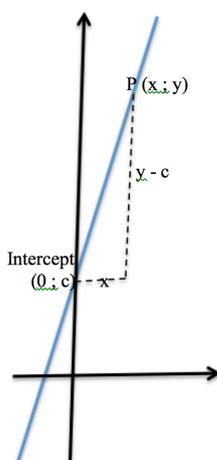
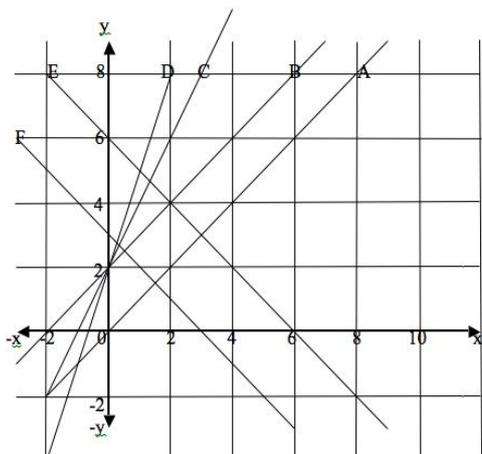


## Straight lines



### Equations of lines

If a straight line has gradient  $m$  and intercept on the  $y$ -axis  $(0; c)$  then for any general point on the line with coordinates  $(x; y)$  the gradient is given by

$$m = \frac{y - c}{x}$$

Rearranging this equation gives the equation of the line in the form

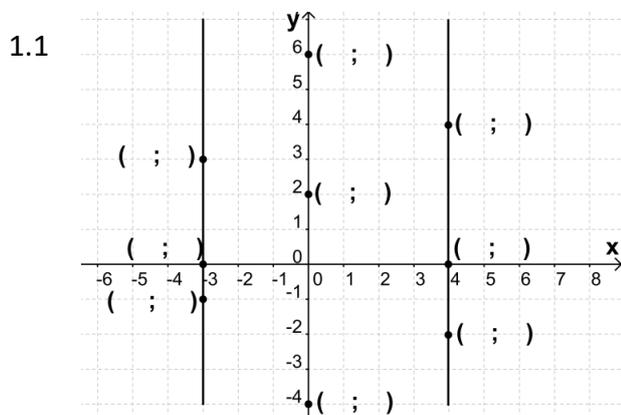
$$\boxed{y = mx + c}$$

Fill in the table below from this diagram.

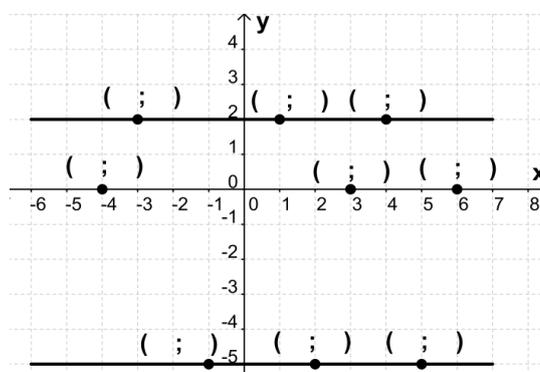
Line	Choose any 2 points on the line	Gradient Rise/Tread $m$	Intercept $c$	Equation of line
A	( ; ) ( ; )			
B	( ; ) ( ; )			
C	( ; ) ( ; )			
D	( ; ) ( ; )			
E	( -2 ; 8 ) ( 2 ; 4 )	Rise/Tread = $-4/4 = -1$		$y = -x + 6$
F	( ; ) ( ; )			

### NEXT

1. Fill in the missing coordinates:



1.2



1.3 What did you notice?

2. Match Column B to column A:

	Column A	Column B
2.1	Equation of the $y$ -axis	$x = k$ ( $k$ is a real number)
2.2	Equation of a line parallel to the $y$ -axis	$y = 0$
2.3	Equation of the $x$ -axis	$y = c$ ( $c$ is a real number)
2.4	Equation of a line parallel to the $x$ -axis	$x = 0$