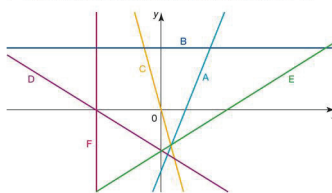


3. From your answers to question 1, what conclusion can you make about the gradient of any vertical line?
4. The graph below shows six straight lines labelled A–F.



Six gradients are given below. Deduce which line has which gradient.

- Gradient = $\frac{1}{2}$ Gradient is infinite Gradient = 2
 Gradient = -3 Gradient = 0 Gradient = $-\frac{1}{2}$

● **The equation of a straight line**

The coordinates of every point on a straight line all have a common relationship. This relationship when expressed algebraically as an equation in terms of x and/or y is known as the equation of the straight line.

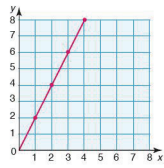
Worked examples a) By looking at the coordinates of some of the points on the line below, establish the equation of the straight line.



x	y
1	4
2	4
3	4
4	4
5	4
6	4

Some of the points on the line have been identified and their coordinates entered in a table above. By looking at the table it can be seen that the only rule all the points have in common is that $y = 4$.

Hence the equation of the straight line is $y = 4$.



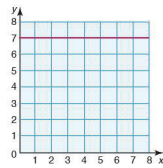
b) By looking at the coordinates of some of the points on the line (left), establish the equation of the straight line.

x	y
1	2
2	4
3	6
4	8

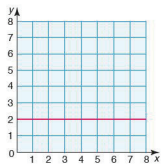
Once again, by looking at the table it can be seen that the relationship between the x - and y -coordinates is that each y coordinate is twice the corresponding x -coordinate. Hence the equation of the straight line is $y = 2x$.

Exercise 28.2 1. In each of the following identify the coordinates of some of the points on the line and use these to find the equation of the straight line.

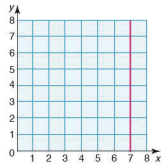
a)



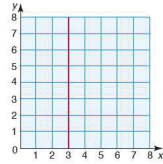
b)



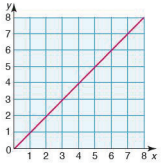
c)



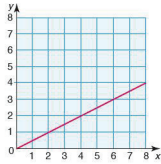
d)

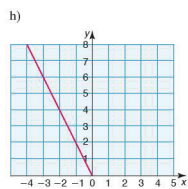
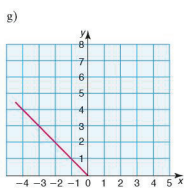


e)



f)





Exercise 28.3 1. In each of the following identify the coordinates of some of the points on the line and use these to find the equation of the straight line.

