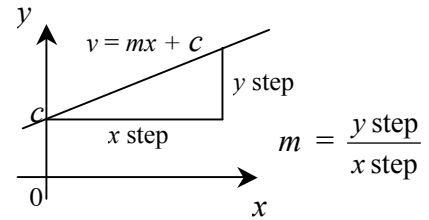


Finding the gradient and intercept from a linear equation

The straight line whose equation is $y = mx + c$, has gradient m and intercept c on the y -axis. The gradient and intercept often give information (e.g. gradient of a distance-time graph = speed).

**Examples**

State the gradient and y -intercept of the straight line:

1. $y = 2 - x$
Gradient = -1 , y -intercept = 2
2. $x - 2y = 4$
 $x - 4 = 2y$
 $y = \frac{1}{2}x - 2$
Gradient = $\frac{1}{2}$, y -intercept = -2

Method

This is in the form $y = mx + c$.
The gradient is the coefficient of x .
The intercept is the constant term.

Rearrange equation so that y is the subject.

Some to try

State the gradient and y -intercepts of the following lines:

- | | | | |
|---------------------------|---------------------------|------------------------------|----------------------------------|
| 1 $y + 1 = 2x$ | 2 $x + 2y = 4$ | 3 $x + y = 15$ | 4 $y = 2(x + 1)$ |
| 5 $y = 2(3x - 4)$ | 6 $2 = y$ | 7 $4x = y + 6$ | 8 $y - 5 = x + 3$ |
| 9 $2x - y + 3 = 0$ | 10 $2(y - 3) = 3x$ | 11 $y + 5 = 3(2 - x)$ | 12 $3(2x + 1) = 2(y - 1)$ |

Answers

Answers are to 2 or 3sf where not exact.

- | | | | | | | | |
|----------|-------|-----------|--------|-----------|--------|-----------|--------|
| 1 | 2, -1 | 2 | -, 2 | 3 | -1, 15 | 4 | 2, 2 |
| 5 | 6, -8 | 6 | 0, 2 | 7 | 4, -6 | 8 | 1, 8 |
| 9 | 2, 3 | 10 | 3/2, 3 | 11 | -3, 1 | 12 | 3, 5/2 |