3 Straight-line graphs – Part 2

Name: _____ Class: _____ Date: _____

Vocabulary

Write each word three times.

English	**Write it 3 times** (English)
gradient	
intercept	

Recall

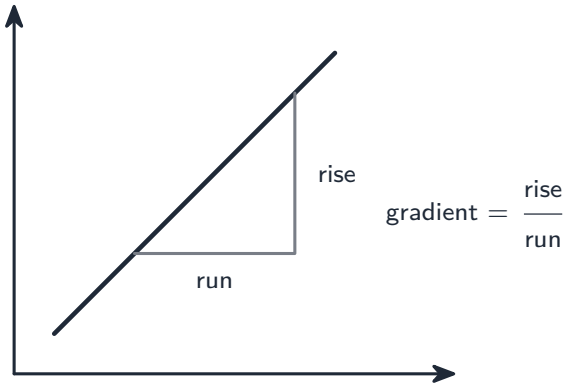
A straight-line graph has a **gradient** (steepness) and crosses the y-axis at the **intercept** .

New ideas

Read these first, then do the Practice.

■ 1 Gradient

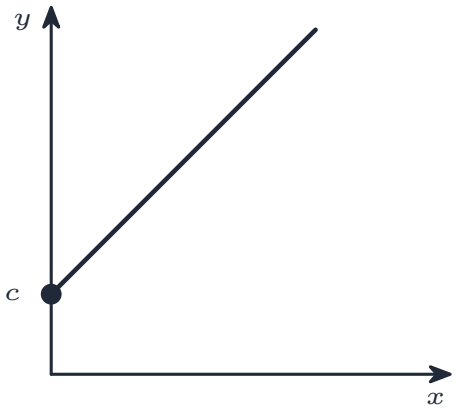
The gradient is how steep a line is – the rise divided by the run:



A bigger gradient means a steeper line.

2 The equation y = mx + c

Every straight line can be written $y = mx + c$:



$y = mx + c$

m = gradient

c = y-intercept

- m is the gradient;
- c is where the line crosses the y-axis (the y-intercept).

Watch out: gradient is **rise ÷ run** – a bigger gradient is a steeper line. In $y = mx+c$, m is the gradient and c is the y-intercept (where the line crosses the y-axis), so don't mix them up.

Practice

Try these in order.

3.6 A line goes up 6 for every 2 across. What is its gradient? [1]

3.7 In $y = 3x + 4$, what is the gradient? [1]

3.8 In $y = 3x + 4$, where does the line cross the y-axis? [1]

3.9 Write the equation of a line with gradient 2 and y-intercept 5. [1]

3.10 Which is steeper: $y = 2x + 1$ or $y = 5x + 1$? [1]

3.11 Challenge. A line has gradient 3 and passes through $(0, -2)$. Write its equation, and find y when $x = 4$. [3]