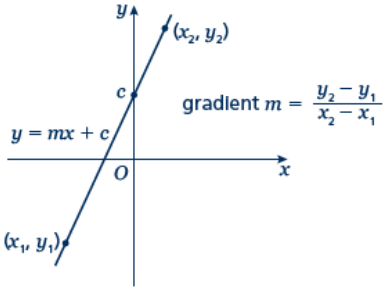
Pearson Edexcel

Intersection with axes

A LEVEL LINKS
Scheme of work: 2a. Straight-line graphs, parallel/perpendicular, length and area problems

Key points

- A straight line has the equation $y = mx + c$, where m is the gradient and c is the y-intercept (where $x = 0$).
- The equation of a straight line can be written in the form $ax + by + c = 0$, where a, b and c are integers.
- When given the coordinates (x_1, y_1) and (x_2, y_2) of two points on a line the gradient is calculated using the formula $m = \dfrac{y_2 - y_1}{x_2 - x_1}$



Practice questions

1 Each line crosses the x-axis at point P. Work out the coordinates of P for each of the following lines:

a $y = 3x + 5$ **b** $y = -\frac{1}{2}x - 7$

c $2y = 4x - 3$ **d** $x + y = 5$

e $2x - 3y - 7 = 0$ **f** $5x + y - 4 = 0$

Answers

1 **a** $\left(-\frac{5}{3}, 0\right)$ **b** $(-14, 0)$

c $\left(\frac{3}{4}, 0\right)$ **d** $(5, 0)$

e $\left(\frac{7}{2}, 0\right)$ **f** $\left(\frac{4}{5}, 0\right)$