Finding a line from information

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. Find the line of gradient 2 through $(1, 5)$. [2 marks]

$5 = 2(1) + c$ gives $c = 3$.

Answer: $y = 2x + 3$

2. Find the line of gradient $\frac{1}{2}$ through $(4, -1)$. [2 marks]

$-1 = 2 + c$ gives $c = -3$.

Answer: $y = \frac{1}{2}x - 3$

3. Find the equation through $(0, 6)$ and $(3, 0)$. [3 marks]

$m = \frac{0-6}{3-0} = -2$.

The first point gives $c = 6$.

Answer: $y = -2x + 6$

4. Find the equation through $(-2, -1)$ and $(2, 7)$. [3 marks]

$m = \frac{7+1}{2+2} = 2$.

$-1 = 2(-2) + c$ gives $c = 3$.

Answer: $y = 2x + 3$

5. Find the equation through $(5, -2)$ and $(5, 6)$. [2 marks]

The x-coordinate is 5 at both points.

The line is vertical.

Answer: $x = 5$

6. A straight path passes through $(1, 3)$ and $(5, 3)$. Write its equation and state its gradient. [2 marks]

Both points have the same y-coordinate.

There is no vertical change, so $m = 0$.

Answer: $y = 3$; gradient 0.