Straight-line equations and intercepts

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. State the gradient and y-intercept of $y = 4x - 7$. [2 marks]

Match $m = 4$ and $c = -7$.

Answer: Gradient 4; $(0, -7)$.

2. Find both intercepts of $y = -2x + 8$. [3 marks]

Set $x = 0$ to get $y = 8$.

Set $y = 0$: $2x = 8$, so $x = 4$.

Answer: $(0, 8)$ and $(4, 0)$.

3. Write $4x + 2y = 10$ in gradient-intercept form. [2 marks]

$2y = -4x + 10$.

Divide by 2.

Answer: $y = -2x + 5$

4. Give three points on $y = \frac{3}{2}x + 1$ using $x = 0, 2, 4$. [3 marks]

Substitute each value into $y = 1.5x + 1$.

The resulting values are 1, 4 and 7.

Answer: $(0, 1)$, $(2, 4)$, $(4, 7)$.

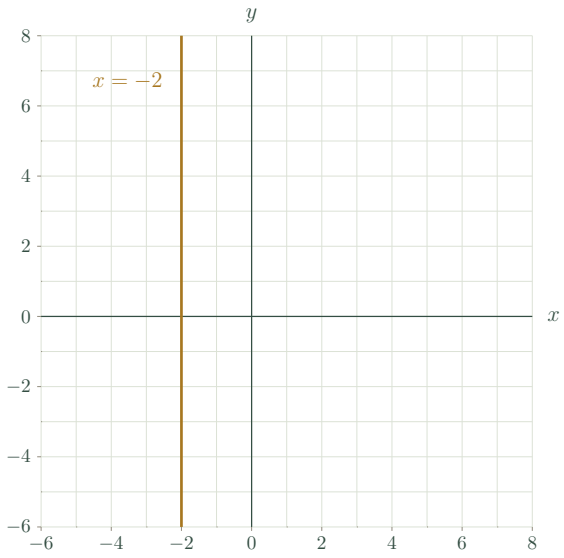
5. Does the point $(3, -1)$ lie on $y = 2x - 7$? Explain. [2 marks]

Substitute $x = 3$: $y = 6 - 7 = -1$.

This matches the given y-coordinate.

Answer: Yes.

6. Describe and sketch the line $x = -2$. [2 marks]



Two points are $(-2, 0)$ and $(-2, 3)$.

Join them vertically; its gradient is undefined.

Answer: A vertical line through all points whose x-coordinate is -2.