



Air maths tuition

Interact, engage and perform

Equation of a line (alternative form)

y
 (x, y)
 (x_1, y_1)
 x
gradient $m = \frac{y - y_1}{x - x_1}$
 $y - y_1 = m(x - x_1)$

Find the equation of the line with gradient 3 that passes through the point A with coordinates $(2, -4)$ giving your answer in the form $ax + by + c = 0$

y
 x
 $A(2, -4)$
Equation of line is:
 $y - (-4) = 3(x - 2)$
 $\therefore y + 4 = 3x - 6$
 $\therefore 3x - y - 10 = 0$

Find the equation of the line passing through the points $A(-2, 3)$ and $B(3, -1)$ giving your answer in the form $ax + by + c = 0$ where a , b and c are integers.

gradient $= \frac{3 - (-1)}{-2 - 3} = -\frac{4}{5}$

y
 x
 $A(-2, 3)$
 $B(3, -1)$

\therefore Equation of line is:
using A :
 $y - 3 = -\frac{4}{5}(x - 2)$
 $\therefore 5y - 15 = -4x - 8$
 $\therefore 4x + 5y - 7 = 0$
using B :
 $y - (-1) = -\frac{4}{5}(x - 3)$
 $\therefore 5y + 5 = -4x + 12$
 $\therefore 4x + 5y - 7 = 0$

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