



Air maths tuition

Interact, engage and perform

Equation of a perpendicular bisector

Find the equation of the perpendicular bisector of the line joining the points $A(3,5)$ and $B(-2,-1)$ giving your answer in the form $ax+by+c=0$ where a , b and c are integers.

$$\begin{aligned}\text{midpt. of } AB &= \left(\frac{3+(-2)}{2}, \frac{5+(-1)}{2} \right) \\ &= \left(\frac{1}{2}, 2 \right)\end{aligned}$$

$$\text{Gradient of } AB = \frac{5-(-1)}{3-(-2)} = \frac{6}{5}$$

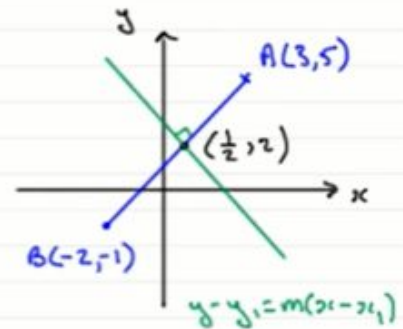
$$\therefore \text{ perp. grad} = -\frac{5}{6}$$

$$\begin{aligned}\therefore \text{ Equation of perp. bisector} \\ \text{is } y-2 &= -\frac{5}{6}\left(x-\frac{1}{2}\right)\end{aligned}$$

$$\therefore 6y-12 = -5x + \frac{5}{2}$$

$$\therefore 12y-24 = -10x + 5$$

$$\therefore 10x + 12y - 29 = 0$$



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