



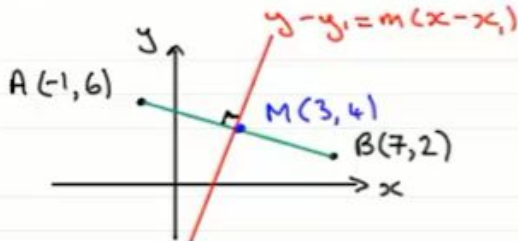
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## Equation of a Perpendicular Bisector | Past Paper Question | P1 CIE Nov 2013 Q7(i)

The point  $A$  has coordinates  $(-1, 6)$  and the point  $B$  has coordinates  $(7, 2)$ .

- (i) Find the equation of the perpendicular bisector of  $AB$ , giving your answer in the form  $y = mx + c$ . [4]



$$\begin{aligned}\text{gradient } AB &= \frac{6-2}{-1-7} \\ &= \frac{4}{-8} \\ &= -\frac{1}{2}\end{aligned}$$

$$\therefore \text{gradient of perp. bisector} = 2$$

$$\text{Mid-pt } M \left( \frac{-1+7}{2}, \frac{6+2}{2} \right) = (3, 4)$$

$\therefore$  Equation of perp. bisector is:

$$y - 4 = 2(x - 3)$$

$$\therefore y - 4 = 2x - 6$$

$$\therefore y = 2x - 2$$

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