

6	<p>Midpoint of $AB = \left(\frac{5}{2}, 0\right)$</p> <p>Gradient of perpendicular to $AB = -\frac{1}{2}$</p> <p>Perpendicular bisector equation is $y = -\frac{1}{2}(x - \frac{5}{2})$ oe</p> <p>Position vector is $\frac{1}{2}\mathbf{i} + \mathbf{j}$</p>	<p>M1</p> <p>M1</p> <p>A1</p> <p>A1</p> <p>[4]</p>	<p>3.1a</p> <p>1.1</p> <p>1.1</p> <p>1.1</p>		
	<p>Alternative method</p> <p>Suppose C has position vector $\mathbf{c} = p\mathbf{i} + \mathbf{j}$</p> <p>$\overline{AC} = (p-1)\mathbf{i} + 4\mathbf{j}$ oe or $AC ^2 = (p-1)^2 + 4^2$ oe</p> <p>$\overline{BC} = (p-4)\mathbf{i} - 2\mathbf{j}$ oe or $BC ^2 = (p-4)^2 + 2^2$ oe</p> <p>$(p-1)^2 + 4^2 = (p-4)^2 + 2^2$</p> <p>Position vector is $\frac{1}{2}\mathbf{i} + \mathbf{j}$</p>	<p>M1</p> <p>M1</p> <p>A1</p> <p>A1</p>	<p>3.1a</p> <p>1.1</p> <p>1.1</p> <p>1.1</p>	<p>soi</p>	