

Question			Answer	Marks	AO	Guidance
15			Circle is $(x+1)^2 + (y-7)^2 = 25$	M1	3.1a	Attempts to complete the square for either x or y terms Soi
			So C is the point $(-1, 7)$	A1	2.1	Correct coordinates of the centre seen or used. Condone incorrect or missing radius
			The intersection of the line and circle at $(7y-25)^2 + y^2 + 14y - 50 - 14y + 25 = 0$	M1	3.1a	Attempt to solve the equations simultaneously $[x^2 + \left(\frac{x+25}{7}\right)^2 + 2x - 14\left(\frac{x+25}{7}\right) + 25 = 0]$ or oe
			Giving $50y^2 - 350y + 600 = 0$	M1	2.1	Simplifies equation leading to two roots. Allow arithmetic errors $[50x^2 + 50x - 600 = 0]$
			So $y = 3, 4$	A1	1.1	Could be solved by calculator $[x = -4, 3]$
			A and B are $(-4, 3)$ $(3, 4)$	A1	1.1	FT their y values
			Gradients of AC and BC are $\frac{4}{3}$ and $\frac{3}{-4}$	M1 A1	3.1a 2.1	Attempt to find gradient(s) of at least one of these lines Both correct gradients (not OA or OB)
			The product of the gradients is -1 so the lines are perpendicular			
			So the triangle is right-angled	A1	2.2a	Clear argument based on perpendicular lines www
			Alternative for last three marks Distance $AB^2 = (-4-3)^2 + (3-4)^2 = 50$	M1		Attempt to find the length of one of the sides of the triangle FT their coordinates
			$AC^2 = BC^2 = \text{radius}^2 = 25$ So $AC^2 + BC^2 = 50 = AB^2$	A1		All three correct lengths found
			So by Pythagoras the triangle is right-angled	A1		Clear argument based on Pythagoras' theorem or the cosine rule leading to a value for angle ACB www
			[9]			