

Q	Marking Instructions	AO	Marks	Typical Solution
11(a)(i)	States correct radius CAO	AO1.2	B1	Radius = $\sqrt{5}$
(a)(ii)	States correct centre CAO	AO1.2	B1	C is (7, -2)
(b)	Finds gradient of the line through the points P and 'their' C (as found in part (a)) Condone one sign error	AO3.1a	M1	Gradient CP = $\frac{-1 - (-2)}{5 - 7} = -\frac{1}{2}$
	Correct tangent gradient obtained from 'their' CP gradient	AO3.1a	M1	So tangent gradient = 2
	Uses a correct form for the equation of a straight line with correct coordinates of P and 'their' tangent gradient	AO1.1a	M1	$y - (-1) = 2(x - 5)$
	States correct final answer in required form ($y = mx + c$) FT from 'their' C found in part (a)	AO1.1b	A1F	$y = 2x - 11$
(c)	Identifies QTC as a right-angled triangle PI	AO3.1a	M1	QTC is a right-angled triangle so we can use Pythagoras
	Finds QC or QC^2 FT 'their' C found in part (a)	AO1.1b	B1F	$QC^2 = (7 - 3)^2 + (-2 - 3)^2$
	Uses Pythagoras' theorem correctly for 'their' triangle	AO1.1a	M1	$4^2 + 5^2 = (\sqrt{5})^2 + QT^2$
	Correct evaluation of length of QT FT 'their' QC and 'their' radius found in part (a)	AO1.1b	A1F	$QT^2 = 36$ so $QT = 6$
Total			10	