Question	Answer	Marks	Guidance
10(b)(ii)	$\cos 3\phi = \frac{1}{2}$	**B1**	
	$\phi = 20^\circ, 100^\circ, 140^\circ$	**3**	**M1** for one correct solution of *their* $\cos 3\phi = k$ using a correct order of operations **A1** for 2 correct solutions **A1** for a third correct solution with no extra solutions in the range
11	$\frac{dy}{dx} = \frac{(2x-3)\frac{2x}{x^2+2} - 2\ln(x^2+2)}{(2x-3)^2}$	**3**	**B1** for $\frac{2x}{x^2+2}$ **M1** for differentiation of a quotient
	When $x = 2$, $\frac{dy}{dx} = \frac{4}{6} - 2\ln 6$, –2.92 Gradient of normal = 0.3428	**M1**	For $-\frac{1}{\textit{their } \frac{dy}{dx}}$
	When $x = 2$, $y = \ln 6$ or $1.79(176)$	**B1**	
	Equation of normal: $y - \ln 6 = -\frac{1}{\textit{their } \frac{dy}{dx}}(x-2)$ or $\ln 6 = -\frac{1}{\textit{their } \frac{dy}{dx}} \times (2) + c$	**M1**	**Dep** for equation of normal using $-\frac{1}{\textit{their } \frac{dy}{dx}}$ and *their y* with $x = 2$.
	When $x = 0$, $y =$ awrt 1.11	**A1**	Must be evaluated.