Question	Answer	Marks	Partial Marks
6(b)	${}^{15}C_{12} \times \left(\frac{x^4}{2}\right)^3 \times \left(\frac{2}{x}\right)^{12}$ oe	**M1**	
	232960	**A1**	
7(a)	Uses a valid Pythagorean identity to write in terms of a single trig ratio e.g. $1 + \tan^2\theta = \tan\theta + 3$	**B1**	
	Rearranges and factorises/solves e.g. $\tan^2\theta - \tan\theta - 2 = 0$ $(\tan\theta - 2)(\tan\theta + 1) = 0$	**M1**	
	$\tan\theta = 2 \quad \tan\theta = -1$ soi	**A1**	
	1.11, –2.03, $-\frac{\pi}{4}$, $\frac{3\pi}{4}$ and no extras in range cao	**A2**	**A1** for any 3 correct, ignoring extras
7(b)	Use of $\tan\phi = \frac{\sin\phi}{\cos\phi}$ in a correct expression or correct working	**M1**	
	Use of $1 - \cos^2\phi = \sin^2\phi$ in a correct expression or correct working	**M1**	
	Completion with $\frac{1}{\cos\phi} = \sec\phi$	**A1**	nfww
7(c)	$\cot x = [-]\sqrt{\text{cosec}^2 x - 1}$ soi or $\sin x = -\frac{8}{17}$ and $\tan x = -\frac{8}{15}$ soi or $\sin x = -\frac{8}{17}$ and $\cos x = \frac{15}{17}$ soi or $\frac{1}{\tan\left(\sin^{-1}\left(-\frac{8}{17}\right)\right)}$	**M1**	
	$-\frac{15}{8}$ or –1.875 cao, isw	**A1**	