

Question			Answer	Marks	AO	Guidance	
7	(a)	(i)	8	B1 [1]	1.1		
7	(a)	(ii)	$\cos(30x + 60) = 1$ $30x + 60 = 360$ $x = 10$	M1* M1dep* A1 [3]	1.1a 1.1 1.1	Setting $\cos(30x + 60)$ equal to 1 Set $30x + 60$ equal to 360 The answer needs to come from sufficient working, if not M0 A0	Possibly implied by next mark May see $x = -2 + 12$ SC B1 $\cos(30x + 60) = k$ for $0 < k < 1$ where $k = \frac{\text{their (a)(i)} - 5}{3}$
7	(b)		$5 + 3\cos(30x + 60) = 7$ $\cos(30x + 60) = \frac{2}{3}$ $(30x + 60 =) 48.18 \dots$ $30x + 60 = 360 - 48.18 \dots$ or $360 + 48.18 \dots$ $(x =) 8.39$ to 3 sf Allow awrt 8.39 $(x =) 11.6$ to 3 sf Allow awrt 11.6	M1 A1 M1 A1 A1 [5]	1.1 1.1 3.1a 1.1 2.2a	Sets given equation equal to 7 and rearranges to obtain $\cos(30x + 60) = k$ where $-1 < k < 1$ Finds the principal value of $30x + 60$ At least one correct value of $30x + 60$ using correct symmetry for cosine curve One correct value of x (in the interval $0 < x < 12$) Second correct value	Condone sign errors in rearranging 48.1896851... 8.393677163... 11.60632284...