Question	Answer	Marks	Guidance
11	$12\log_{81} y = 3\log_3 y$ oe or $4\log_9 x = 2\log_3 x$ oe	**B1**	For either
	$8\log_3 x + 3\log_3 y = 5$ oe	**B1**	
	$2\log_3 x + 3\log_3 y = 2$ oe	**B1**	
	$y = 3^{\frac{1}{3}}, x = \sqrt{3}$	**3**	**M1** for attempt to solve *their* equations. Must have at least 2 **B** marks and obtain 2 solutions **A1** for each
	Alternative		
	$12\log_{81} y = \dfrac{\log_3 y^{12}}{4}$ oe or $4\log_9 x = \dfrac{\log_3 x^4}{2}$ oe	**B1**	
	$x^{32}y^{12} = 3^{20}$ or $x^8y^3 = 3^5$ oe	**B1**	
	$x^4y^6 = 3^4$ or $x^2y^3 = 3^2$ oe	**B1**	
	$y = 3^{\frac{1}{3}}, x = \sqrt{3}$	**3**	**M1** for attempt to solve *their* equations, which must both be in the correct form. Must have at least 2 **B** marks and obtain 2 solutions **A1** for each
12	$\cos\left(3\theta - \dfrac{\pi}{2}\right) = \dfrac{1}{2}$ oe soi	**B1**	
	$\theta = -\dfrac{7\pi}{18}, \dfrac{\pi}{18}, \dfrac{5\pi}{18}$	**4**	**M1 dep** on previous **B** mark, for one of the following $3\theta - \dfrac{\pi}{2} = -\dfrac{5\pi}{3}, -\dfrac{\pi}{3}, \dfrac{\pi}{3}, \dfrac{5\pi}{3}$ **A1** for one correct solution **A1** for a second correct solution **A1** for a third correct solution and no extra solutions in the range.

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