Question	Answer	Marks	Guidance
10(b)	$\sin(3\phi - 1.5) = \frac{2}{3}$ $3\phi - 1.5 = 0.7297$	**M1**	Correct order of the operation Do not accept in degrees
	$3\phi - 1.5 = 2.41[12],\ 7.01[3]$	**A1**	soi by correct answers with no extras within the range
	0.743, 1.30, 2.84	**3**	**M1 dep** on first M1 for correct order of operations or one correct solution **A1** for one solution **A1** for a further 2 correct solutions and no extras in the range Do not accept in degrees
11(a)	$d = 3\log_x 3$ or $\log_x 3^3$ nfww	**B1**	Must be exact Allow $d = \log_x 27$ nfww
	$\frac{n}{2}(2\log_x 3 + 3(n-1)\log_x 3)$ nfww	**M1**	For use of sum formula with *their d* must be in the form of $\log_x 3$
	$\frac{n}{2}(3n-1)\log_x 3$ or $\left(\frac{3n^2}{2} - \frac{n}{2}\right)\log_x 3$	**A1**	Must be in the form of $k\log_x 3$
11(b)	$r = 3\tan^2\theta$	**B1**	soi
	$\lvert 3\tan^2\theta \rvert < 1$ or $[-1 <]3\tan^2\theta < 1$ or $\left[-\frac{1}{3} <\right]\tan^2\theta < \frac{1}{3}$ or $[0 <]\tan^2\theta < \frac{1}{3}$	**B1**	
	$\tan\theta < \frac{1}{\sqrt{3}}$ or $0 < \tan\theta < \frac{1}{\sqrt{3}}$	**B1**	
	$0 < \theta < \frac{\pi}{6}$	**B1**	

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