Question	Answer	Marks	Partial Marks
5	$\log_a\left(\frac{5(p+1)p}{p+2}\right) = \log_a 12$ oe, nfww or $\frac{5(p+1)p}{p+2} = 12$ oe, nfww	**M2**	**M1** for correct use of one log law in a correct equation e.g. $\log_a(p+1)+\log_a p-\log_a(p+2)+\log_a 5=\log_a 12$ or $\log_a p(p+1)-\log_a(p+2)=\log_a 12-\log_a 5$ or $\log_a \frac{p+1}{p+2}+\frac{1}{\log_p a}+\log_a 5=\log_a 12$
	$5p^2 - 7p - 24 = 0$	**A1**	
	$(5p + 8)(p - 3) = 0$ or formula	**DM1**	**FT** *their* 3-term quadratic
	$p = 3$ and no other solution nfww	**A1**	
6(a)	*OA*: $2\sqrt{3}$ or $\sqrt{12}$ soi	**B1**	
	Correct method to find angle *AOE* e.g. $2\tan(\ldots) = \frac{3}{\sqrt{3}}$ oe or $36 = 12+12-2(12)\cos AOE$ oe or $\pi - 2\tan^{-1}\frac{\sqrt{3}}{3}$ oe	**M1**	
	Angle *AOE*: $\frac{2\pi}{3}$ soi, isw	**A1**	
	Arc *AFE*: *their* $2\sqrt{3}$ × *their* $\frac{2\pi}{3}$ soi or $\frac{4\sqrt{3}}{3}\pi$	**M1**	**FT** *their* $\frac{2\pi}{3}$ and *their* $2\sqrt{3}$
	Perimeter: $10 + 2\sqrt{3} + \frac{4\sqrt{3}}{3}\pi$ or exact equivalent, cao	**A1**	

© Cambridge University Press & Assessment 2024