		Penalise any extra angles within range by deducting the final A mark.

Question number	Scheme	Marks
8 (a)	$4\times1.5=6$	B1
	$\pi r^2=6$	M1
	$r=\sqrt{\frac{6}{\pi}}$	A1
		(3)
(b)	$\frac{\mathrm{d}A}{\mathrm{d}r}=2\pi r$	M1
	$\frac{\mathrm{d}r}{\mathrm{d}t}=\frac{\mathrm{d}r}{\mathrm{d}A}\times\frac{\mathrm{d}A}{\mathrm{d}t}\left[=\frac{1}{2\pi r}\times1.5\right]$	M1
	$=\frac{1}{2\pi\sqrt{\frac{6}{\pi}}}\times1.5$	M1
	$=0.173$	A1
		(4)
		Total 7 marks

Part	Mark	Notes
(a)	**B1**	For $\left(4\times1.5=\right)6$
	M1	For $\pi r^2=6$ an attempt to rearrange to make r the subject
	A1	For $r=\sqrt{\frac{6}{\pi}}$
(b)	**M1**	For $\frac{\mathrm{d}A}{\mathrm{d}r}=2\pi r$ This must be correct.
	M1	For application of $\frac{\mathrm{d}r}{\mathrm{d}t}=\frac{\mathrm{d}r}{\mathrm{d}A}\times\frac{\mathrm{d}A}{\mathrm{d}t}$
	M1	For substituting their r into $\frac{\mathrm{d}r}{\mathrm{d}t}$
	A1	For awrt 0.173