7(a)	Obtain correct $\frac{1}{2}r^2 \times \frac{2}{3}\pi - \frac{1}{2}r^2 \sin\frac{2}{3}\pi$
	$0.614r^2$
7(b)(i)	Obtain $\left[\frac{\mathrm{d}A}{\mathrm{d}r}\right] = 1.228\mathrm{r}$
	Use $\frac{\mathrm{d}A}{\mathrm{d}t} = \frac{\mathrm{d}A}{\mathrm{d}r} \times \frac{\mathrm{d}r}{\mathrm{d}t}$, or equivalent, with $r = 20$
	Obtain 9.8
7(b)(ii)	State or imply $\frac{2}{3}\pi r$ for length of arc AB
	Differentiate and apply correct use of chain rule
	Obtain 0.84

10(a)	$s^2 = r^2 + r^2 - 2r^2 \cos\frac{2\pi}{3}$ or $\frac{r}{\sin\frac{\pi}{6}} = \frac{s}{\sin\frac{2\pi}{3}}$ or $s = 2r \times \cos\frac{\pi}{6}$ or $\left(\frac{r}{2}\right)^2 + \left(\frac{s}{2}\right)^2 = r^2$ or $\left(\frac{3r}{2}\right)^2 + \left(\frac{s}{2}\right)^2 = s^2$ oe
	$\Rightarrow$ E.g. $s = 2r \times \frac{\sqrt{3}}{2} \Rightarrow s = \sqrt{3}\,r$

10(b)	[Angle BAD, BAC or CAD =] $\frac{2\pi}{3}$ or $120°$
	[Sector BAD =] $\frac{1}{2}r^2 \times \frac{2\pi}{3}$ oe
	[Sector BCD =] $\frac{1}{2}s^2 \times \frac{\pi}{3}$ oe
	$= \frac{3}{6}\pi r^2$ or $\frac{1}{2}\pi r^2$
	Either [Area triangle ABD, ABC or ACD =] $\frac{1}{2}r^2 \times \sin\frac{2\pi}{3}$ or $\frac{r}{2} \times \frac{s}{2}$ oe
	$= \frac{\sqrt{3}}{4}r^2$
	Or [Area triangle CBD =] $\frac{1}{2}s^2 \times \sin\frac{\pi}{3}$ or $\frac{3r}{2} \times \frac{s}{2}$ oe
	$= \frac{3\sqrt{3}}{4}r^2$
	$\left(\frac{\sqrt{3}}{2} - \frac{\pi}{6}\right)r^2$ or e.g. $\left(\frac{12\sqrt{3} - 4\pi}{24}\right)r^2$ oe in the required exact form

9(a)	$\frac{1}{2}r^2\alpha = 8\alpha \Rightarrow r = 4$
	$\frac{1}{2}r^2 \sin\alpha = 4 \Rightarrow \alpha = \frac{\pi}{6}$
	Area of segment $= \frac{1}{2} \times 4^2 \times \frac{\pi}{6} - 4$
	$= \frac{4}{3}\pi - 4$
9(b)	$r^2 + r^2 - 2r^2\cos\alpha = \frac{1}{2}r^2 \Rightarrow 2\cos\alpha = \frac{3}{2}$
	$\alpha = 0.723[0.72273\ldots] \Rightarrow \frac{1}{2}r^2 \sin(their\ 0.723)[= 4]$
	$r = 3.48$ [3.4777…]
	Area of segment $= \frac{1}{2} \times 3.48^2 \times 0.723 - 4 = 0.371$ [0.37068…]