25	eg $\frac{40}{360}\pi r^2 - \frac{1}{2}r^2 \sin 40 (= 28)$ oe **or** $\frac{40}{360}\pi r^2 = 28 + \frac{1}{2}r^2 \sin 40$ oe		6	M1	for a correct expression for the area of the shaded region Allow 3.14… or $\frac{22}{7}$ for π sin 40 = 0.64…
	(radius ^{2} =) 992 – 1024 (radius =) 31.8(096…)	31.8		A1	Allow answers in the range 31.5 – 32.0
	eg $(BC^2 =) 2\times"31.8"^2 - 2\times"31.8"^2 \cos 40 (= 473.4...)$ **or** $\frac{0.5BC}{"31.8"} = \sin 20$ **or** $\frac{BC}{\sin 40} = \frac{"31.8"}{\sin(70)}$			M1	for a correct first step to find *BC* using **their clearly identified radius** eg *r* = …. or seen on diagram NB $\frac{180-40}{2} = 70$ sin 20 = 0.34… sin 70 = 0.93… or 0.94
	eg $(BC =)\sqrt{2\times"31.8"^2 - 2\times"31.8"^2 \cos 40} (= 21.7...)$ **or** $(BC =) 2\times"31.8"\sin 20 (= 21.7...)$ **or** $BC = \frac{"31.8"\sin 40}{\sin(70)} (= 21.7...)$			M1	dep on previous M1 for a complete method to find *BC* cos 40 = 0.76… or 0.77
	eg $\frac{130}{360}\times 2\times\pi\times"21.7"$			M1	dep on previous M1 for a complete method to find the length of arc *BD*
	Correct answer scores full marks (unless from obvious incorrect working)	49.4		A1	accept 48.9 – 49.7
					Total 6 marks