

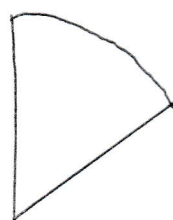
$\triangle OMG$ is Equilateral

& has area

$$\frac{1}{2} \times 2^2 \times \sin 60^\circ$$

Sector OMG has

area $\frac{\pi \times 2^2}{6}$

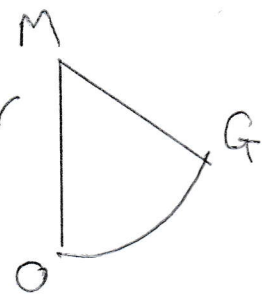


Segment shaded

$$= \text{Sector} - \triangle$$

$$= \frac{\pi \times 2^2}{6} - \frac{1}{2} \times 2^2 \times \sin 60^\circ$$

Dotted Area = Semicircle - Sector



- Segment Shaded

$$= \frac{\pi \times 2^2}{2} - \frac{\pi \times 2^2}{6} - \left[\frac{\pi \times 2^2}{6} - \frac{1}{2} \times 2^2 \times \sin 60^\circ \right]$$

Now multiply by 2 to get both sides

