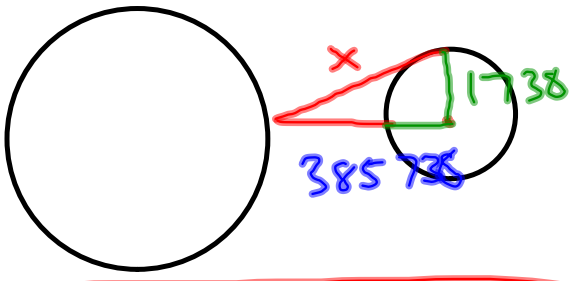
5.

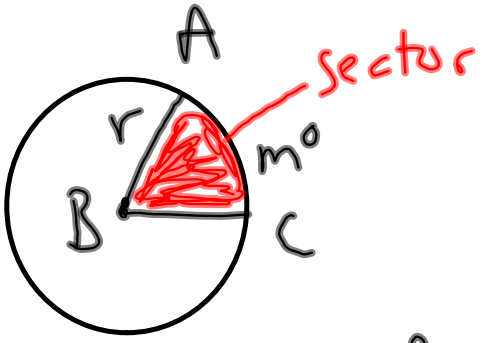


$\sqrt{385,738^2 + 1738^2} = \sqrt{x^2}$

$x =$

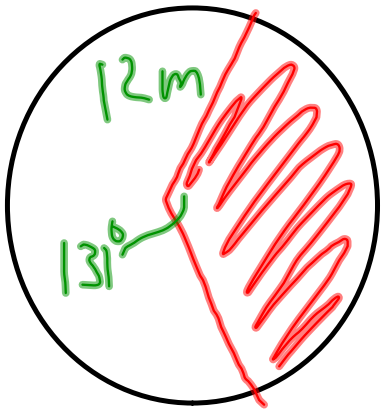
11.3 Sector Area & Arc length

Sector: region bounded by 2 radii and the intercepted arc



Area of a sector: $A = \pi r^2 \left(\frac{m}{360}\right)$

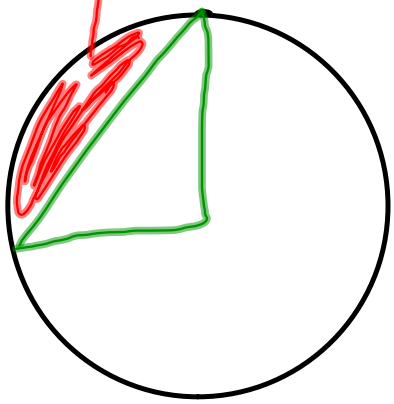
Ex: Find the area.



$$A = \pi r^2 \left(\frac{m}{360}\right)$$
$$= \pi (12)^2 \left(\frac{131}{360}\right)$$
$$= 52.4\pi \approx$$
$$\approx 164.62\ m^2$$

Segment of a circle: region bounded by an arc and its chord.

segment.

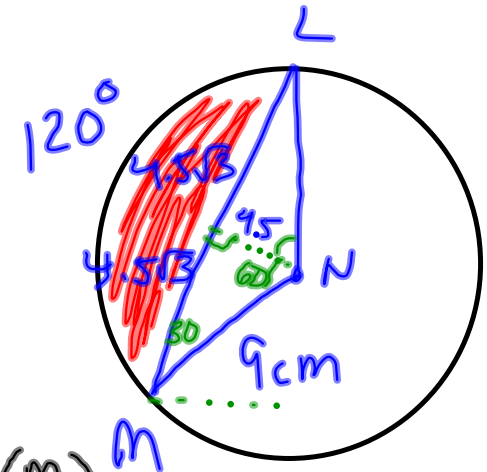


Area of a segment: $\frac{1}{2}r^2$

$$A = \pi r^2\left(\frac{m}{360}\right) - \frac{1}{2}bh$$

$$= (\text{area of sector}) - (\text{area of } \Delta)$$

Ex: Find the area of the segment



$\frac{2x}{2} = \frac{9}{2}$

$x = 4.5$

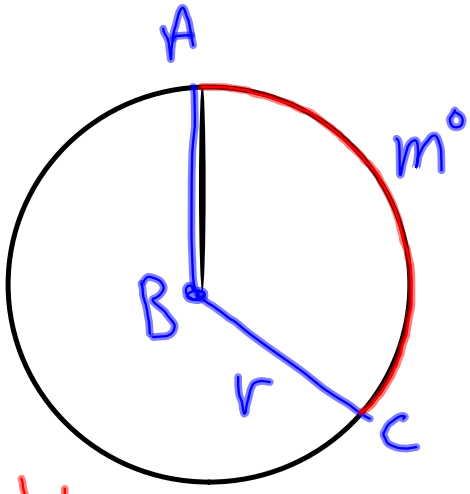
$A = \pi r^2\left(\frac{m}{360}\right) - \frac{1}{2}bh$

$A = \pi(9)^2\left(\frac{120}{360}\right) - \frac{1}{2}(9\sqrt{3})(4.5)$

$A = 84.8 - 35.1$

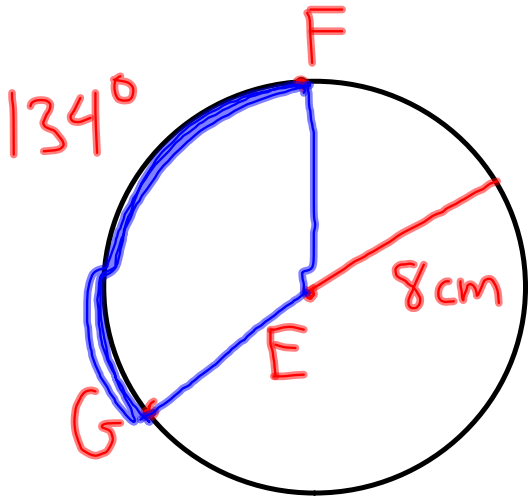
$A = 49.7\ cm^2$

Arc length: distance along an arc



Arc length: $L = 2\pi r\left(\frac{m}{360}\right)$

Find the arc length of $\overset{\frown}{FG}$



$$L = 2\pi r\left(\frac{m}{360}\right)$$
$$= 2\pi(8)\left(\frac{134}{360}\right)$$
$$= 5.95\pi \text{ cm}$$

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