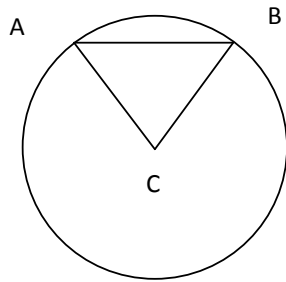


find the area of the smaller segment whose chord is 8" long in a circle with and 8" radius

Solution. Let the chord is $AB = 8''$ and $AC = CB = 8''$ are radiuses. As $AB = AC = CB = 8''$ so ABC is equilateral triangle with all angles equal 60° . $\angle ACB = 60^\circ = \frac{\pi}{3}$

$$S = \frac{1}{2} AC^2 (\angle ACB - \sin \angle ACB) = 32 \left(\frac{\pi}{3} - \sin \frac{\pi}{3} \right) = 5.79 \text{ square inch}$$



Answer: area of segment is 5.79 square inch