

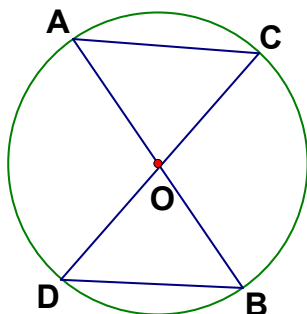
Name _____
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Date _____
Geometry

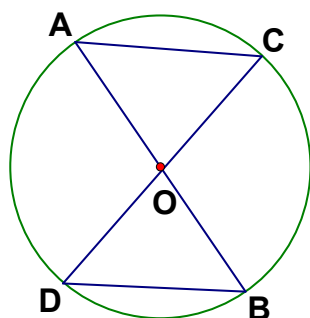
Conversions with Arc Length and Area of a Sector

1. Find the arc length of a sector that has a diameter of 10 inches and a central angle of $\frac{\pi}{3}$ radians in terms of π .
2. Find the arc length of a sector that has a radius of 4 inches and has a central angle of 45° to the nearest tenth of an inch.
3. Find the area of a sector whose radius is 7 centimeters and central angle is 40° to the nearest hundredth of a square centimeter.
4. Find the area of a sector whose diameter is 20 centimeters and central angle is $\frac{2\pi}{3}$ radians to the nearest square centimeter.

5. If arc $AC = 8$, and $\overline{AB} = 10$, find $m\angle AOC$ to the nearest hundredth of a degree.



6. If the area of sector AOC is 12π and $\overline{AO} = 6$, find $m\angle AOC$ to the nearest radian.



7. In a circle with a diameter of 32, the area of a sector is $\frac{512\pi}{3}$. The measure of the angle of the sector, in radians, is

- | | |
|---------------------|----------------------|
| 1) $\frac{\pi}{3}$ | 3) $\frac{16\pi}{3}$ |
| 2) $\frac{4\pi}{3}$ | 4) $\frac{64\pi}{3}$ |

8. The diagram below shows circle O with radii $\overline{OA}$ and $\overline{OB}$. The measure of angle AOB is 120° , and the length of a radius is 6 inches.

Which expression represents the length of arc AB , in inches?

- 1) $\frac{120}{360}(6\pi)$
- 2) $120(6)$
- 3) $\frac{1}{3}(36\pi)$
- 4) $\frac{1}{3}(12\pi)$

