

TOPIC/OBJECTIVE:

GG: Area, Arc Length,
Sector, Equation of Circles
Geometry

NAME:

CLASS/PERIOD:

7

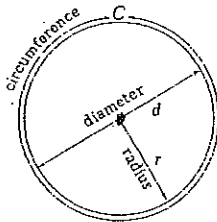
DATE:

3-4-16

ESSENTIAL QUESTION:

What are important parts of and formulas for circles?

QUESTIONS:



$$d = 2r$$
$$r = \frac{1}{2}d = \frac{d}{2}$$

(radius is half diameter) *all radii in a circle are r
 r = radius - distance from center to edge of a circle

d = diameter - distance through the center from one side to the other side in a circle

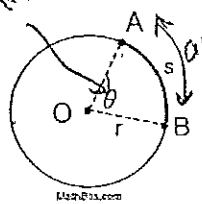
Circumference - distance around the circle

$$C = \pi d \quad \text{or} \quad C = 2\pi r$$

$$\text{Area of a Circle} = \pi r^2$$

Sector = section of a circle (slice)

central angle

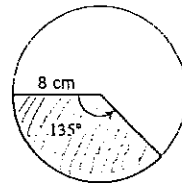


Central Angle = angle whose vertex is at the center of a circle

Arc = portion of the circumference

$$\text{Area of a Sector} = \frac{\theta}{360^\circ} \cdot \pi r^2$$

Example



$$A_s = \frac{135^\circ}{360} \pi \cdot (8\text{cm})^2$$

$$= 24\pi \text{cm}^2 \text{ (exact)}$$

$$\approx 75.4 \text{cm}^2 \text{ (approximate)}$$

θ = central angle

*to get an "exact"

answer, put

everything

except π

in calculator

so final

answer has

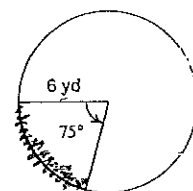
" π " in it

$$\text{Length of Arc AB} = \frac{\theta}{360^\circ} \cdot \pi d$$

Or

$$\text{Length of Arc AB} = \frac{\theta}{360^\circ} \cdot 2\pi r$$

Example



$$A_L = \frac{75^\circ}{360^\circ} \cdot 2\pi (6\text{yd})$$

$$= 2.5\pi \text{yd} \text{ (exact)}$$

$$\approx 7.85 \text{yd} \text{ (approx)}$$

SUMMARY: