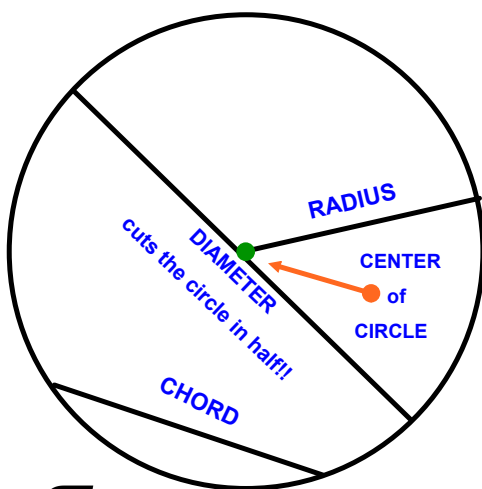# CIRCLES

The radius and diameter <u>are measures of distance</u> in a circle

RADIUS  x 2 = DIAMETER
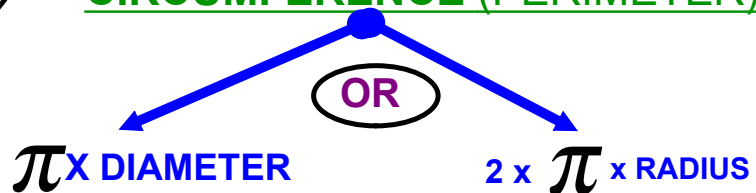
DIAMETER $\div$ 2 = RADIUS

VIP: A full circle has 360°

A 1/2 circle has 180°

RADIUS
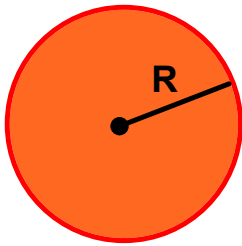
DIAMETER cuts the circle in half!!

CENTER of CIRCLE

CHORD

$\pi$ = 3.1415926...

**CIRCUMFERENCE** (PERIMETER):

OR

$\pi$ X DIAMETER          2 x $\pi$ x RADIUS

-------------------------------------------------------------------

## CIRCUMFERENCE BACKWARDS

$\div$ $\dfrac{\text{CIRCUMFERENCE}}{\pi}$ =  DIAMETER $\div$ 2 = RADIUS

**AREA OF A CIRCLE:**

**RADIUS$^2$ X** $\pi$

$\pi$ = 3.14159

- - - - - - - - - - - - - - - - - - - - - - - - - -

**AREA BACKWARDS:**

**2$^{ND}$** $\sqrt{\dfrac{Area\,of\,circle}{\pi}}$ **1$^{ST}$** $\div$

**= RADIUS**

# PARTS OF A CIRCLE
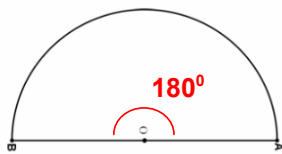
| | | | |
|---|---|---|---|
| 180$^0$ | 180$^0$ | 90$^0$ | 90$^0$ |
| **1/2 circle with diameter** | **1/2 circle without diameter** | **1/4 circle with 2 radius** | **1/4 circle without 2 radius** |

| PERIMETER | PERIMETER | PERIMETER | PERIMETER |
|---|---|---|---|
| $\left(\dfrac{\pi \text{ x Diam}}{2}\right) + (\text{diam})$ | $\dfrac{\pi \text{ x Diam}}{2}$ | $\left(\dfrac{\pi \text{ x Diam}}{4}\right) + (2\text{ radius})$ | $\dfrac{\pi \text{ x Diam}}{4}$ |
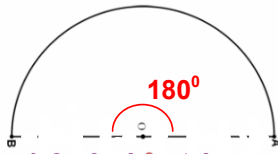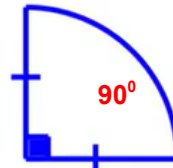
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

| AREA of a 1/2 CIRCLE | AREA of a 1/4 CIRCLE |
|---|---|
| $\dfrac{R^2 \text{ X } \pi}{2}$ | $\dfrac{R^2 \text{ X } \pi}{4}$ |

## ARC LENGTH IN A CIRCLE

arc length

radius

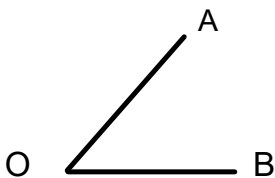Angle ( in degrees$^\circ$)

center point
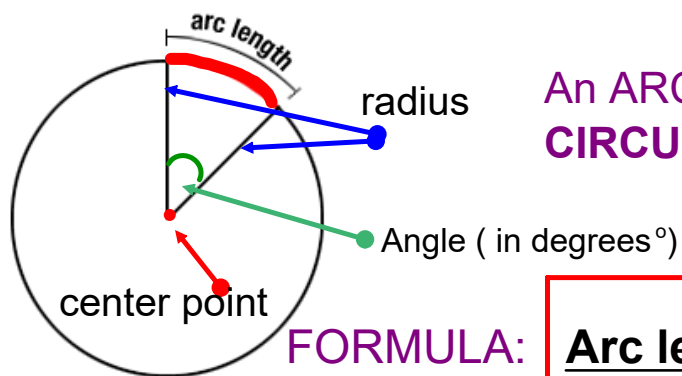
An ARC is a part of the circles **CIRCUMFERENCE**

FORMULA:

$$\frac{\text{Arc length}}{\text{Circmf}} = \frac{\text{Degrees}^\circ \text{ of Arc}}{360^\circ}$$
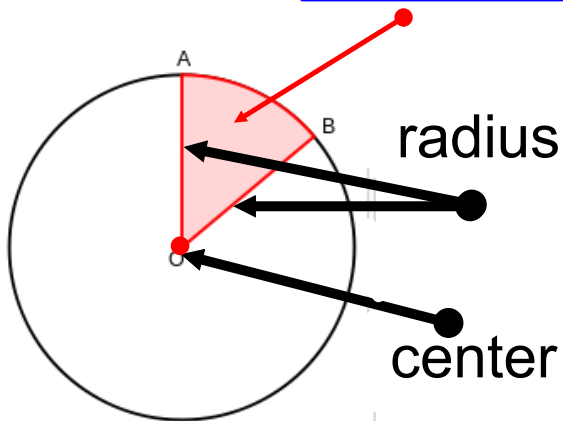
CROSS MULTIPLY to solve!!!!!

sec. 1 review:

A

O                    B

We name an angle based on the letters
at the beginning, middle and end, so this angle
is called     ∠AOB....If it was in a circle,
we would also call it an arcs, but would not mention the center
It would be called AB

## AREA of a SECTOR

A

B

radius

center

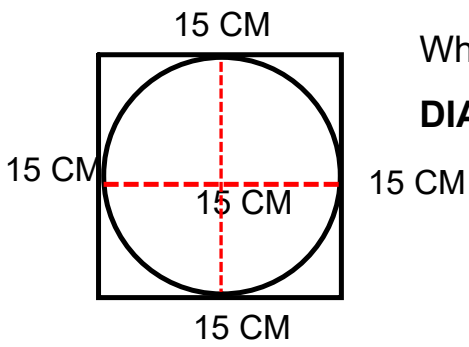The SECTOR is a part

of the **AREA OF A CIRCLE**

FORMULA:

$$\text{Area of Sector} = \frac{\text{Degrees}° \text{ of Sector}}{360°}$$

$R^2 \text{ X } \pi$

AREA of a CIRCLE

CROSS MULTIPLY!!!!

15 CM

15 CM        15 CM
        15 CM

15 CM
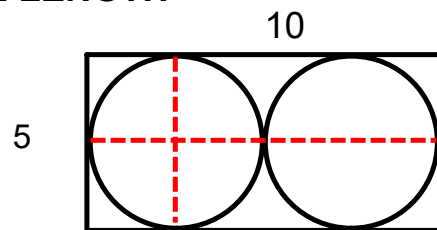
When a circle fits inside a square

**DIAMETER= SIDE LENGTH**

10

5

Shaded area

Big area - small area