

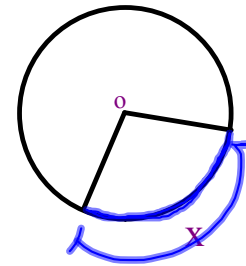
FINDING ARC LENGTH

STEP 1 – Calculate the *CIRCUMFERENCE* using:

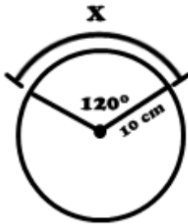
$$C = 2\pi r$$

STEP 2 – Find *ARC LENGTH* using:

$$\frac{\text{Length of Arc}}{\text{Circumference}} = \frac{\text{Angle}}{360^\circ}$$



EXAMPLE PROBLEM



Step 1) Calculate Circumference

$$C = 2\pi r$$

$$= 2\pi(10\text{cm})$$
$$= 2(3.14)(10\text{cm})$$

$$\text{Circumference} = 62.8 \text{ cm}$$

Step 2) Use the ratio

$$\frac{\text{Length of Arc}}{\text{Circumference}} = \frac{\text{Angle}}{360^\circ}$$

$$\frac{x}{62.8 \text{ cm}} = \frac{120^\circ}{360^\circ}$$

Cross multiply and solve for "x"

$$360^\circ x = (120^\circ)(62.8\text{cm})$$

$$360x = 7536^\circ \text{ cm}$$

$$\frac{360^\circ}{360^\circ} x = \frac{7536^\circ \text{ cm}}{360^\circ}$$

$$x = 20.9 \text{ cm}$$

Worksheet 6.18

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