1)

6.7 Circumference & Arc Length

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2)

Circumference

- Defn. – the distance around a circle.
- Theorem– Circumference of a Circle –

  $C = 2\pi r$ or $C = \pi d$

* Always use the π button on your calculator, NOT 3.14!!!

3)

Ex: Find the circumference of a circle with a diameter of 12 cm. (Round to 2 decimal places.)

4)

Ex: Find the radius of a circle with a circumference of 52 in.

5)

Arc Length

- Definition. – a piece of the circumference of a circle.
- The measure of an arc is in degrees.
- The length of an arc is in linear units. (such as ft, cm, etc.)

6)

Arc Length Corollary

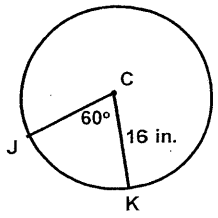
- The length of $\overset{\frown}{AB}$ is:

$$\frac{m\overset{\frown}{AB}}{360^\circ} * 2\pi r$$

7)

Ex: Find the length of $\overset{\frown}{JK}$.

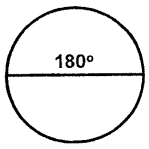
$$\frac{m\overset{\frown}{JK}}{360^\circ} * 2\pi r$$



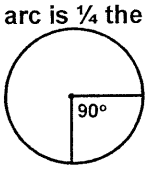
8)

Arc Length Corollary Observations

- **The length of a semicircle is ½ the circumference.**



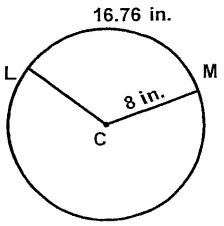
- **The length of a 90° arc is ¼ the circumference.**



9)

Ex: Find the m $\overset{\frown}{LM}$.

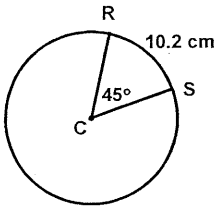
$$\text{length of } \overset{\frown}{LM} = \frac{m\overset{\frown}{LM}}{360^\circ} * 2\pi r$$



10)

Ex: Find the circumference of circle C.

$$\text{length of } \overset{\frown}{RS} = \frac{m\overset{\frown}{RS}}{360^\circ} * 2\pi r$$



Assignment

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#s 1 – 21 all