1)

6.7 Circumference & Arc Length

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2)

Circumference

- <u>Defn</u>. – the distance around a circle.
- <u>Theorem</u>– <u>Circumference of a Circle</u> –

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

* Always use the π button on your calculator, <u>NOT</u> 3.14!!!

3)

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

4)

<u>Ex</u>: Find the radius of a circle with a circumference of 52 in.

5)

Arc Length

- <u>Definition</u>. – a piece of the circumference of a circle.

- The <u>measure of an arc</u> is in degrees.
- The <u>length of an arc</u> is in linear units. (such as ft, cm, etc.)

6)

Arc Length Corollary

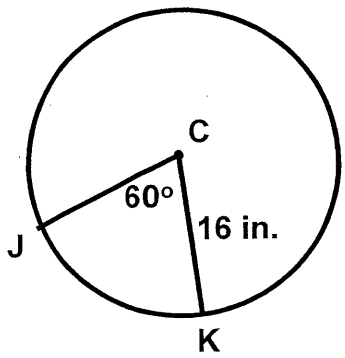
- The length of $\widehat{AB}$ is:

$$\frac{m\,\widehat{AB}}{360^o} * 2\pi r$$

7)

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

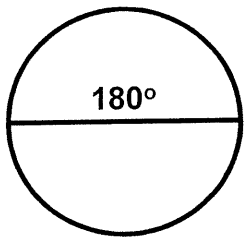
$$\frac{m\overset{\frown}{JK}}{360^o} * 2\pi r$$



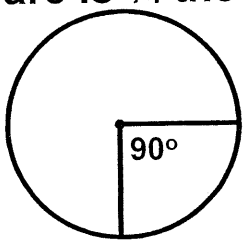
8)

Arc Length Corollary Observations

- The length of a semicircle is ½ the circumference.



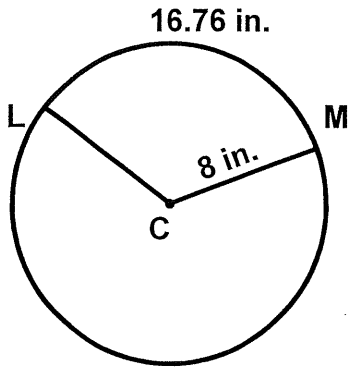
- The length of a 90° arc is ¼ the circumference.



9)

Ex: Find the m $\widehat{LM}$.

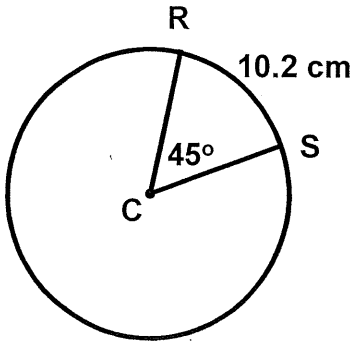
$$length\ of\ \widehat{LM} = \frac{m\,\widehat{LM}}{360^o} * 2\pi r$$



10)

<u>Ex</u>: Find the circumference of circle C.

$$length\ of\ \widehat{RS} = \frac{m\,\widehat{RS}}{360^o} * 2\pi r$$



Assignment
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#s 1 – 21 all