pre-HS Chapter 10 SOLs   **Name:** _____
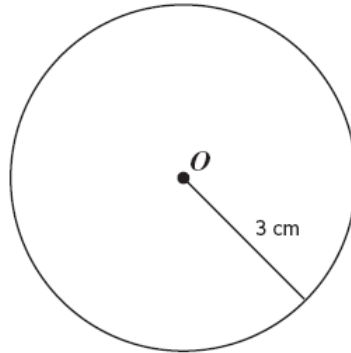
Multiple Choice (25 Points)
Identify the choice that best completes the statement or answers the question.

_____   1. Which is closest to the circumference of circle O shown?

     a.   113.04 cm   b.   75.36 cm   c.   37.68 cm   d.   18.84 cm

_____   2. Which statement *must* be true about a diameter of a circle?

     a.   Divides a circle into fourths
     b.   Intersects at only one point on the circle
     c.   Shortest distance across a circle
   d.   Intersects the center of a circle

_____   3. In the circle shown, Point T is the center of the circle and Point R is on the circle.
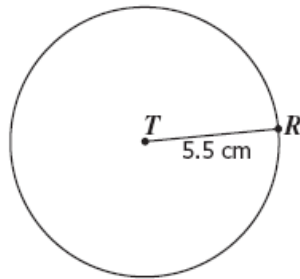
Which is closest to the circumference of circle T ?

     a.   15.70 cm   b.   17.27 cm   c.   31.40 cm   d.   34.54 cm

_____   4. If the diameter of a circle is 7 inches, which is closest to the circumference?

     a.   21.98 in.   b.   38.47 in.   c.   43.96 in.   d.   153.86 in.

_____   5. The diameter of a circle is 6 feet. Which is closest to the circumference of the circle?

     a.   18.84 ft   b.   28.26 ft   c.   37.68 ft   d.   113.04 ft

_____   6. Section *ABC* and section *EBD* of the flower garden contain roses. $\overline{AE}$ and $\overline{CD}$ are straight line segments.
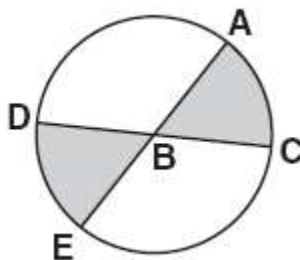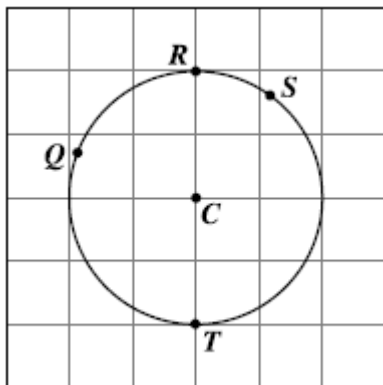

If ∠ABC measures 38°, what is the measure of ∠EBD?

a. 38°   b. 90°   c. 52°   d. 142°

_____   7. The radius of each wheel on this cart is 13 inches.

If a steel rim is fitted around the wheel, which is closest to the circumference of the rim?

a. 20.4 in.   b. 40.8 in.   c. 81.6 in.   d. 530.7 in

_____   8. In the figure below, point *C* is the center of the circle.

Which two points can be connected to form a chord that is *not* a diameter?

a. Points *Q* and *T*   b. Points *S* and *C*   c. Points *R* and *T*   d. Points *T* and *C*

_____   9. Which is a true statement?

a. The length of the radius of a circle is one-fourth the length of the diameter.
b. The length of the radius of a circle is the same as the length of the diameter.
c. The length of the radius of a circle is one-half the length of the diameter.
d. The length of the radius of a circle is two times the length of the diameter.

_____ 10. Which is *closest* to the circumference of a circle with a radius of 9 inches?

     a. 28.26 in.   b. 56.52 in.   c. 63.59 in.   d. 81.31 in.

_____ 11. In the figure below, point R is the center of the circle.
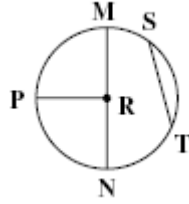
     Which of the following is a chord of the circle?

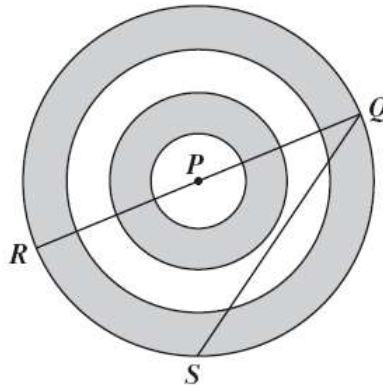   a. $\overline{ST}$ b. $\overline{PR}$ c. $\overline{MR}$ d. $\overline{RN}$

_____ 12. The original Ferris wheel introduced at the 1893 World's Fair in Chicago had a diameter of 250 feet.

     Which is closest to the distance a person who rode this wheel traveled in one complete revolution?

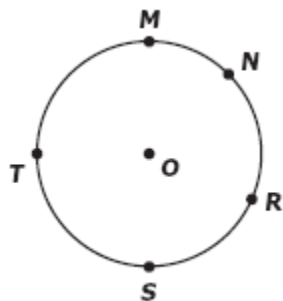   a. 393 ft   b. 785 ft   c. 1,570 ft   d. 49,063 ft

_____ 13. Point P is the center of the circular target shown in the picture.

     Which appears to be a diameter of the circle?

     a. $\overline{PQ}$ b. $\overline{SQ}$ c. $\overline{PR}$ d. $\overline{RQ}$

____ 14. In the figure, point O is the center of the circle.
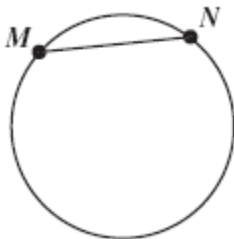

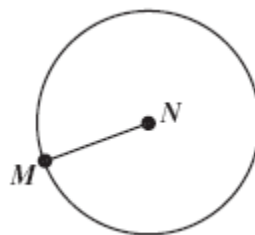Which two points appear to make a diameter when connected with a straight line?

a. *M* and *S*   b. *T* and *R*   c. *O* and *R*   d. *N* and *S*

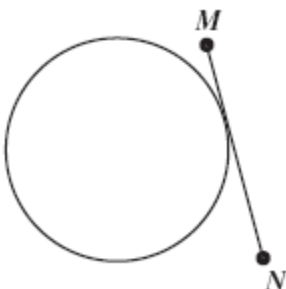____ 15. Which illustration best shows $\overline{MN}$ as the radius of the circle?

a.

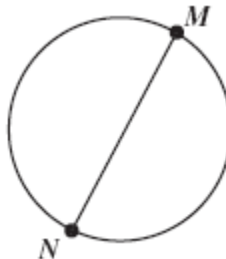
c.

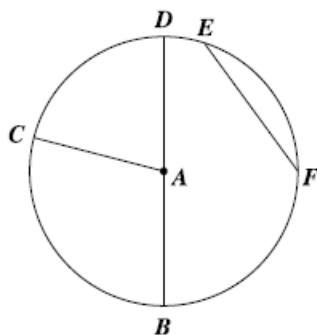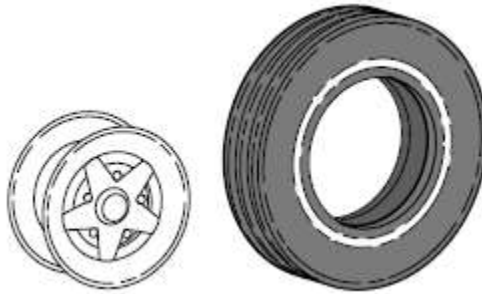

b.

d.

____ 16. Point *A* is the center of the circle.

$\overline{EF}$ is best described as --

a. a radius   b. a chord   c. a diameter   d. an arc

____ 17. The wheel rim has a diameter of 15 inches.

Which is *closest* to the inside circumference of the tire designed to fit on the rim?

a. 47.1 in   b. 94.2 in   c. 176.6 in   d. 706.5 in

Ch 10 Notes Discovery: (50 Points)
Formulas:

Circumference = _____ (using the radius) or = _____ (using the diameter)
Radius = _____ diameter

Fill in the blanks

Arc length = $\dfrac{central\ angle}{\underline{\quad\quad}}$ × _____

Angles:
Central Angle = _____   sides are _____
Inscribed Angle = ½(_____ _____)   sides are _____
Interior Angle = = ½(_____ + _____) sides are _____
Exterior Angle = ½(_____ - _____) sides are _____

Minor Arc: arc < _____   Major Arc: arc > _____   Semi-Circle: arc = _____

Special Segments:
  Inside segments: parts _____ together = parts _____ together
  Outside segments: _____ part times _____ = _____ squared
  Outside segments: _____ part times _____ = _____ part times _____

Other Things:

Tangents are _____ to radii or diameter.

Equation of a circle: $(x - \underline{\quad})^2 + (y - \underline{\quad})^2 = \underline{\quad}^2$ with (h, k) as its center and r as its radius

Use _____ of diameter to find the center of a circle

Use _____ formula (from center to edge) to find the radius