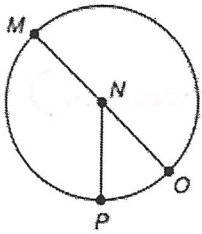


1. A circle is shown.



Name: Key

Study Guide: Circles

Assessment Date: _____

Identify each of the following in the figure.

- a. the center of the circle

center N

- b. a diameter of the circle

\overline{MO} or \overline{OM}

- c. three radii of the circle

\overline{NM} , \overline{NO} , \overline{NP}

Show the formula you used and all your calculations. If a formula involves π , first give an exact answer. Then, calculate an approximate answer using 3.14 for π .

7. Compute the circumference of a circle with radius of length 17 inches.

$$\begin{aligned} r &= 17 \\ d &= 34 \end{aligned}$$

$$\begin{aligned} C &= d\pi \\ &= 34 \cdot 3.14 \\ &= 106.76 \text{ in} \end{aligned}$$

8. Compute the diameter of a circle with a circumference of 25 feet.

$$\begin{aligned} C &= d\pi \\ 25 &= 3.14d \\ 7.96 &= d \end{aligned}$$

$$7.96 \text{ ft}$$

9. Compute the area of a circle with radius of length 4.5 centimeters.

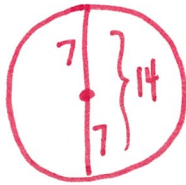
$$\begin{aligned} A &= \pi \cdot r \cdot r \\ 3.14 \cdot 4.5 \cdot 4.5 \\ &= 63.585 \text{ cm}^2 \end{aligned}$$

$$63.6 \text{ cm}^2$$

12. Marlene wants to enclose her circular vegetable garden with fencing to keep rabbits from eating the vegetables. If the diameter of her garden is 14 feet, how much fencing will she need to buy if fencing is sold by the linear foot?

$$d = 14$$

$$r = 7$$



Find fencing (Circumf.)

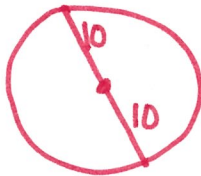
$$C = d \pi$$

$$C = 14 \cdot 3.14$$

$$C = 43.96 \text{ ft}$$

$$= 44 \text{ ft}$$

13. Justin wants to cover the top of a circular swimming pool to keep insects out of the pool. If the diameter of the pool is 20 feet, what will be the area of the top of the cover (the portion of the cover that covers the surface of the pool)?



$$d = 20$$

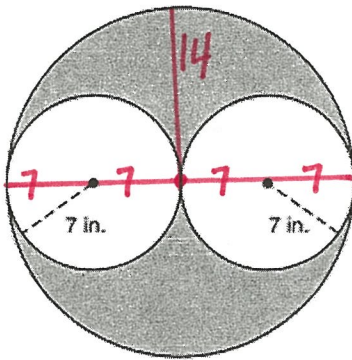
$$r = 10$$

$$A = \pi \cdot r \cdot r$$

$$3.14 \cdot 10 \cdot 10$$

$$= 314 \text{ ft}^2$$

17. Two small circles are drawn that touch each other, and both circles touch the large circle.



$$A_{\text{BIG circle}} = \pi \cdot r \cdot r$$

$$3.14 \cdot 14 \cdot 14$$

$$= 615.44$$

$$A_{\text{LITTLE circle}} = \pi \cdot r \cdot r$$

$$3.14 \cdot 7 \cdot 7$$

$$= 153.86$$

$$2 \text{ Little circles}$$

$$=$$

$$(153.86) 2$$

$$= 307.72$$

$$\text{BIG} - 2 \text{ Little}$$

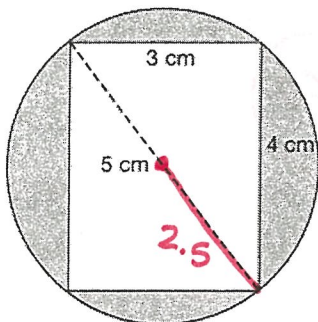
$$615.44 - 307.72$$

$$= 307.72 \text{ in}^2$$

Which is closest to the area of the shaded region?

- a. 615 square inches
- b. 462 square inches
- c. 88 square inches
- d. 308 square inches

11.



$$A_{\odot} = \pi \cdot r \cdot r$$

$$= 3.14 \cdot 2.5 \cdot 2.5$$

$$= 19.625$$

$$A_{\square} = 3 \cdot 4$$

$$= 12$$

$$19.625$$

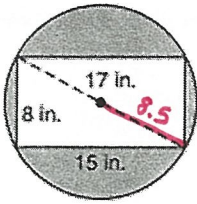
$$- 12.000$$

$$\hline$$

$$7.625$$

$$7.6 \text{ cm}^2$$

A rectangle is inscribed in a circle.



- a. Calculate the exact area of the circle.

$$d = 17$$
$$r = 8.5$$

$$A_{\odot} = \pi \cdot r \cdot r$$
$$3.14 \cdot 8.5 \cdot 8.5$$
$$= 226.9 \text{ in}^2$$

- b. Calculate the area of the rectangle.



$$A_{\square} = 8 \cdot 15$$
$$= 120 \text{ in}^2$$

- c. Calculate the exact area of the shaded region. Then, calculate the approximate area using 3.14 for π .

$$A_{\odot} - A_{\square} =$$

$$226.9 - 120 = 106.9 \text{ in}^2$$

Amy and Brian want to fence in a portion of their backyard for a play space for their children. Determine the area of the largest portion of the yard that they can enclose with 90 feet of fencing.

One medium circle and one small circle touch each other, and each of these circles touches the large circle. Calculate the area of the shaded region.

