NAME: _____ DATE: _____

CIRCLES & AREA PERIOD: _____

How Do You Find the Radius or Diameter When Given the Area of a Circle?

(Topic #5)

EXAMPLE 1: Using Area to Find the Radius

a) Find the radius of the circle whose area is 201.1 km^2.	b) Find the radius of the circle whose area is 9π in^2.

EXAMPLE 2: Using Area to Find the Diameter

a) Find the diameter of the circle whose area is 176.7 square feet.	b) Find the diameter of the circle whose area is 0.25π ft^2.

$$A = \pi r^2$$

PRACTICE: Find the radius or diameter of the circle with the given area. *Show all work.*

1. Find the radius of the circle whose area is 280.1 cm^2.	2. Find the diameter of the circle whose area is 19.6 mi^2.
3. Find the diameter of the circle whose area is 56.25π cm^2.	4. Find the radius of the circle whose area is 6.3π yd^2.

5. Find the radius of the circle whose area is 23.8 in^2.	6. Find the diameter of the circle whose area Is 78.5 in^2.
7. Find the radius of the circle whose area is 16.8π ft^2.	8. Find the diameter of the circle whose area is 256π cm^2.

NAME: _____ DATE: _____

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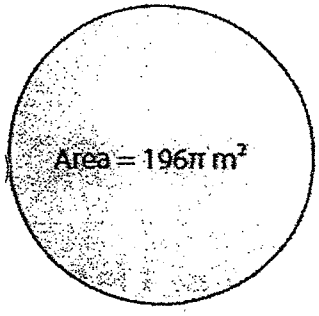
HOMEWORK - (Topic #5)

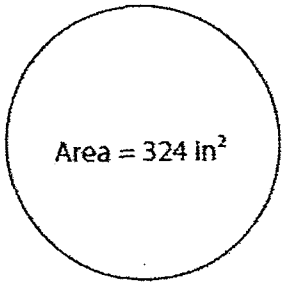
Finding the Radius or Diameter When Given the Area of a Circle

Find the radius of the following circles. Round to the *nearest tenth*. *Show all work*.

1.

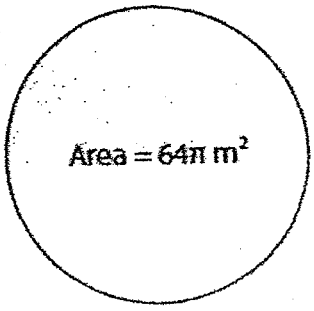


2.

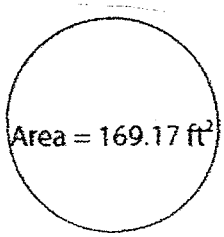


Find the diameter of the following circles. Round to the *nearest hundredth*. *Show all work*.

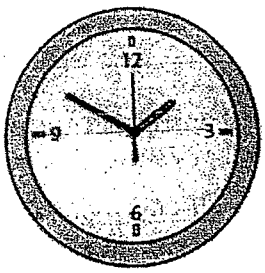
3.



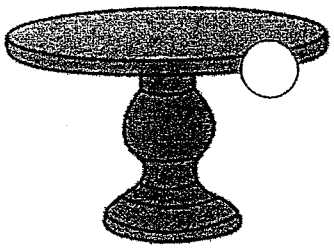
4.



5. If the clock has an area of 529 π mm^2, what will be the diameter?



6. The area of the dining table is 256 π cm^2. Find the radius of the dining table.



NAME: KEY DATE: _____

CIRCLES & AREA PERIOD: ✓

How Do You Find the Radius or Diameter When Given the Area of a Circle?

(Topic #5)

EXAMPLE 1: Using Area to Find the Radius

a) Find the radius of the circle whose area is 201.1 km².

$r =$ ____

$A = 201.1 \text{ km}^2$

$A = \pi r^2$

$\frac{201.1}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{64} = \sqrt{r^2}$

$8 = r$

km

b) Find the radius of the circle whose area is 9π in².

$r =$ ____

$A = 9\pi$

$A = \pi r^2$

$\frac{9\pi}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{9} = \sqrt{r^2}$

$3 = r$

in

EXAMPLE 2: Using Area to Find the Diameter

a) Find the diameter of the circle whose area is 176.7 square feet.

$d =$ ____

$A = 176.7 \text{ ft}^2$

$A = \pi r^2$

$\frac{176.7}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{56} = \sqrt{r^2}$

$7.5 \approx r$

$d = 2(7.5)$

$d = 15 \text{ ft}$

b) Find the diameter of the circle whose area is 0.25π ft².

$d =$ ____

$A = 0.25\pi$

$A = \pi r^2$

$\frac{0.25\pi}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{0.25} = \sqrt{r^2}$

$0.5 = r$

$d = 2(0.5)$

$d = 1 \text{ ft}$

$$A = \pi r^2$$

FINAL ANS → tenth

PRACTICE: Find the radius or diameter of the circle with the given area. *Show all work.*

1. Find the radius of the circle whose area is 280.1 cm².

$r =$ _____

$A = 280.1 \text{ cm}^2$

$A = \pi r^2$

$\frac{280.1}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{89} = \sqrt{r^2}$

$9 = r$

cm

2. Find the diameter of the circle whose area is 19.6 mi².

$d =$ _____

$A = 19.6 \text{ mi}^2$

$A = \pi r^2$

$\frac{19.6}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{6.23887\,3769} = \sqrt{r^2}$

$2.5 = r$

$d = 2r$

$d = 2(2.5)$

$d = 5$ mi

3. Find the diameter of the circle whose area is 56.25π cm².

$d =$ _____

$A = 56.25\,\pi \text{ cm}^2$

$A = \pi r^2$

$\frac{56.25\pi}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{56.25} = r^2$

$7.5 = r$

cm

$d = 2r$

$d = 2(7.5)$

$d = 15$ cm

4. Find the radius of the circle whose area is 6.3π yd².

$r =$ _____

$A = 6.3\,\pi \text{ yd}^2$

$A = \pi r^2$

$\frac{6.3\pi}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{6.3} = \sqrt{r^2}$

$2.5 = r$

yd

5. Find the radius of the circle whose area is 23.8 in².

$r =$ ____

$A = 23.8 \text{ in}^2$

$$A = \pi r^2$$

$$\frac{23.8}{\pi} = \frac{\pi r^2}{\pi}$$

$$\sqrt{7.575775291} = \sqrt{r^2}$$

$$2.8 = r$$

in

6. Find the diameter of the circle whose area Is 78.5 in².

$d =$ ____

$A = 78.5 \text{ in}^2$

$$A = \pi r^2$$

$$\frac{78.5}{\pi} = \frac{\pi r^2}{\pi}$$

$$\sqrt{24.987\,32607} = \sqrt{r^2}$$

$$5.0 = r$$

$$d = 2r$$

$$d = 2(5)$$

$$d = 10 \text{ in}$$

7. Find the radius of the circle whose area is 16.8π ft².

$r =$ ____

$A = 16.8\pi \text{ ft}^2$

$$A = \pi r^2$$

$$\frac{16.8\pi}{\pi} = \frac{\pi r^2}{\pi}$$

$$\sqrt{16.8} = \sqrt{r^2}$$

$$4.1 = r$$

ft

8. Find the diameter of the circle whose area is 256π cm².

$d =$ ____

$A = 256\pi \text{ cm}^2$

$$A = \pi r^2$$

$$\frac{256\pi}{\pi} = \frac{\pi r^2}{\pi}$$

$$\sqrt{256} = \sqrt{r^2}$$

$$16 = r$$

$$d = 2r$$

$$d = 2(16)$$

$$d = 32 \text{ cm}$$

NAME: Key DATE: _____

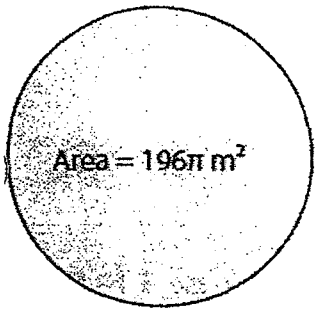
CIRCLES & AREA PERIOD: _____

HOMEWORK - (Topic #5)

Finding the Radius or Diameter When Given the Area of a Circle

Find the radius of the following circles. Round to the *nearest tenth.* *Show all work.*

1.



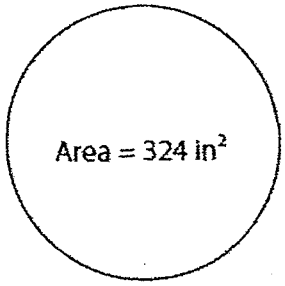
$A = \pi r^2$

$\frac{196\pi}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{196} = \sqrt{r^2}$

$14\ m = r$

2.



$A = \pi r^2$

$\frac{324}{\pi} = \frac{\pi r^2}{\pi}$

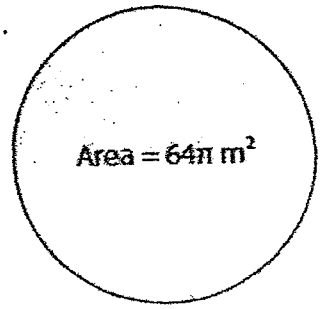
$\sqrt{103.13240031} = \sqrt{r^2}$

$10.2 = r$

10

Find the diameter of the following circles. Round to the *nearest hundredth.* *Show all work.*

3.



$A = \pi r^2$

$\frac{64\pi}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{64} = \sqrt{r^2}$

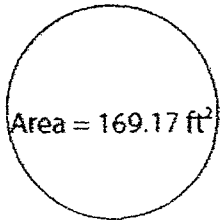
$8 = r$

$d = 2r$

$d = 2(8)$

$d = 16\ m$

4.



$A = \pi r^2$

$\frac{169.17}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{53.84848345} = \sqrt{r^2}$

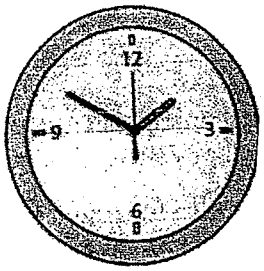
$7.34 = r$

$d = 2r$

$d = 2(7.34)$

$d = 14.68\ ft$

5. If the clock has an area of 529 π mm², what will be the diameter?



$d =$ _____

$A = 529\pi \text{ mm}^2$

$A = \pi r^2$

$\frac{529\pi}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{529} = \sqrt{r^2}$

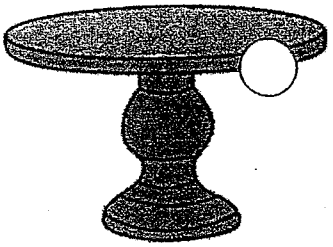
$23 = r$

$d = 2r$

$d = 2(23)$

$d = 46 \text{ mm}$

6. The area of the dining table is 256 π cm². Find the radius of the dining table.



$r =$ _____

$A = 256\pi \text{ cm}^2$

$A = \pi r^2$

$\frac{256\pi}{\pi} = \frac{\pi r^2}{\pi}$

$\sqrt{256} = \sqrt{r^2}$

$16 = r$

cm