

Name: Key
7R

Date: _____
Classwork 11.3

Area of a Circle

AIM: How do you find the area of a circle given the radius or diameter?

Remember: What is area?

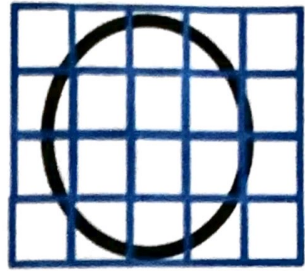
Area is the number of square units that is needed to cover a figure.

The **units** for area are **always squared** (ex: inches², square feet).

The **area** of a circle is equal to π times the radius squared.

The **formula** for the area of a circle is:

$$\text{area} \rightarrow A = \pi r^2 \leftarrow \text{radius}$$

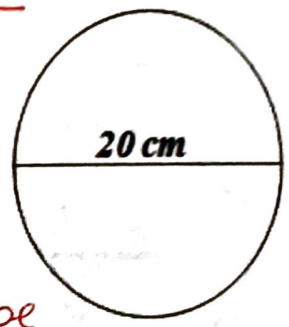


Example #1: "Using the Pi Button"

Find the area of the circle to the right. Round your answer to the nearest tenth.

What do you know? $d=20 \rightarrow r=10$	What do you need to find? Area
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Use π button



Step 1: Write out the formula

F $A = \pi r^2$

Step 2: Substitute

S $A = \pi (10)^2 \rightarrow$ Type into calc.

Step 3: Do the math.

M $A = 314.1592 \dots$

Step 4: Round and label your answer

U $A = 314.2 \text{ cm}^2$

Try It!

Find the area of a circle whose radius is 8 meters. Round your answer to the nearest hundredth.

What do you know? $r=2$	What do you need to find? Area
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Step 1: Write out the formula

F $A = \pi r^2$

Step 2: Substitute

S $A = \pi (2)^2$

Step 3: Do the math.

M $A = 12.5663 \dots$

Step 4: Round and label your answer

U $A = 12.57 \text{ m}^2$

Example #2: "Leaving in Terms of Pi"

Find the area of a circle whose diameter is 6 inches. Leave your answer in terms of π .

$$d = 6 \rightarrow r = 3$$

NO π button

$$F \quad A = \pi r^2$$

$$S \quad A = \pi (3)^2 \rightarrow \text{Type into calc}$$

$$M \quad A = \pi 9$$

$$U \quad \boxed{A = 9\pi \text{ in}^2}$$

Try It!

Find the area of a circle whose radius is 4 cm. Leave your answer in terms of π .

Show your work.

$$r = 4$$

$$A = \pi r^2$$

$$A = \pi (4)^2$$

$$A = \pi 16$$

$$\boxed{A = 16\pi \text{ cm}^2}$$