Love of Learning Educational Services
Bringing Curiosity, Relevance, and Enjoyment to the Math Classroom

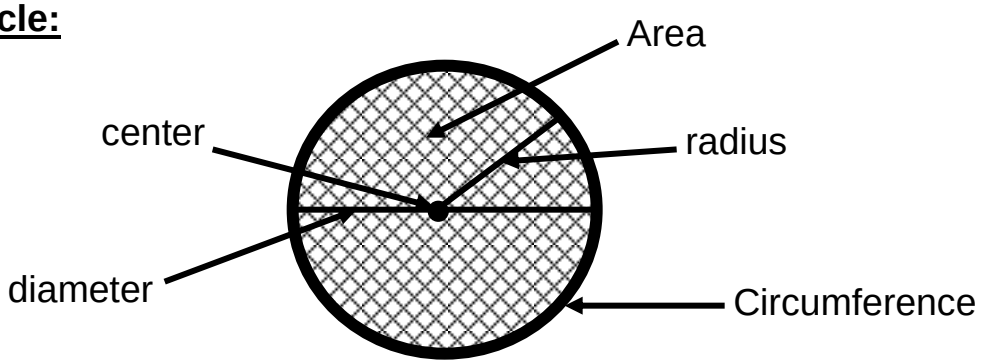
Circle Notes

Circumference and Area of Circles

Guided note taking pages for calculating circumference and area of circles.

Circle Notes

Parts of a circle:



Vocabulary:

diameter – line segment that goes from edge to edge and through the center of a circle

radius – line segement that goes from the center to the edge of a circle

Circumference – the distance around the outside of the circle

Area – the measure of the inside of a circle (always measured in square units)

Pi – the ratio of the Circumference to the diameter of the circle ----- $\pi = \frac{C}{d}$

π is the symbol for Pi

Pi is approximately 3.14 because it takes a little more than 3 diameters to go around the Circumference of any circle.

Special Relationships within a Circle:

- The diameter is _____ the radius.
- The radius is _____ the diameter.
- The Circumference is about _____ the diameter.
- The diameter is _____ the Circumference.
- The Circumference is about _____ the radius.
- The radius is about _____ the Circumference.

Calculating Circumference

If we know the ***radius*** or the ***diameter*** of a circle, we can find the ***Circumference***.

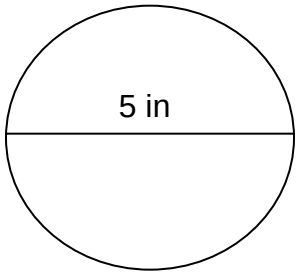
Circumference Formulas

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

$\pi \approx 3.14$

Sample Problems:

1 What is the Circumference of this circle?_____



Think about it:

Which is given, the radius or the diameter?

So, which formula should we use?

Work it out:

1. Write the formula.
2. Plug in the numbers.
3. Multiply to get the answer.
4. Label the answer with the correct measurement.

Work it out:

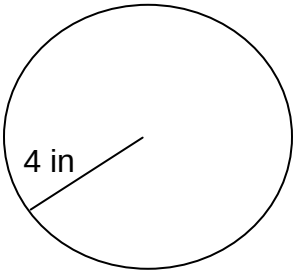
Step 1: $C = \pi d$

Step 2: $C = 3.14(5)$

Step 3: $C = 15.7$ in

This answer makes sense because 3 x 5 = 15. π is just a little more than 3, so a little bit more than 15 makes sense.

2 What is the Circumference of this circle?_____



Think about it:

Which is given, the radius or the diameter?

So, which formula should we use?

Work it out:

1. Write the formula.
2. Plug in the numbers.
3. Multiply to get the answer.
4. Label the answer with the correct measurement.

Work it out:

Step 1: _____

Step 2: _____

Step 3: _____

This answer makes sense because:

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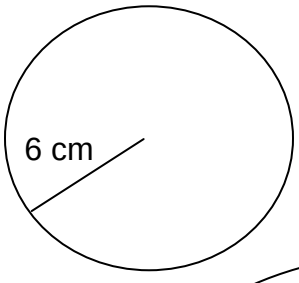
3 What is the Circumference of this circle?_____



Think about it:

Which is given, the radius or the diameter?

So, which formula should we use?

Work it out:

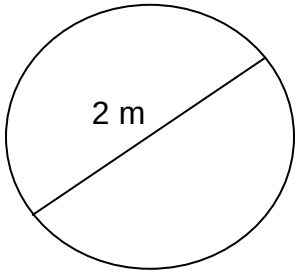
Step 1: _____

Step 2: _____

Step 3: _____

This answer makes sense because:

4 What is the Circumference of this circle?_____



Think about it:

Which is given, the radius or the diameter?

So, which formula should we use?

This answer makes sense because:

Work it out:

Step 1: _____

Step 2: _____

Step 3: _____

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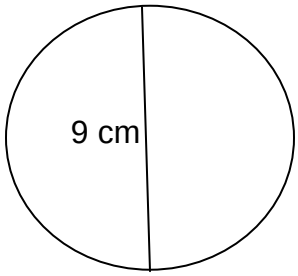
5 What is the Circumference of this circle?_____



Think about it:

Which is given, the radius or the diameter?

So, which formula should we use?

This answer makes sense because:

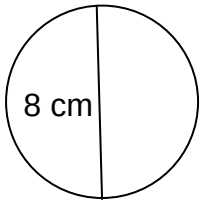
Work it out:

Step 1: _____

Step 2: _____

Step 3: _____

6



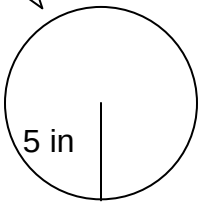
Work it out:

Step 1: _____

Step 2: _____

Step 3: _____

7



Work it out:

Step 1: _____

Step 2: _____

Step 3: _____

Calculating Area of a Circle

If we know the ***radius*** or the ***diameter*** of a circle, we can find the ***Area***.

Area Formula

$A = \pi r^2$

$\pi \approx 3.14$

r^2 means $r \times r$

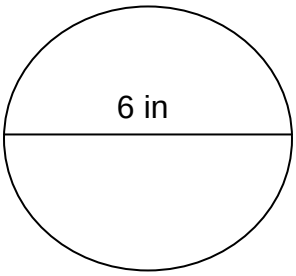
so

$A = \pi r^2$ means $A = \pi \times (r \times r)$

We always have to square the radius before we multiply by π.

Sample Problems:

1 What is the Area of this circle?_____



Think about it:

Which is given, the radius or the diameter?

So, what is the radius?

d ÷ 2 = r

Work it out:

1. Write the formula.
2. Plug in the numbers.
3. Square the radius. (Multiply radius x radius)
4. Multiply to get the answer.
5. Label the answer with the correct measurement.

Work it out:

Step 1: $A = \pi r^2$

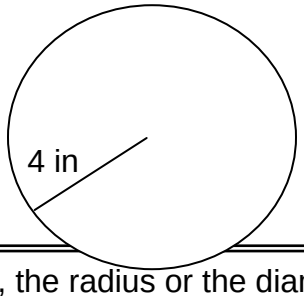
Step 2: $A = 3.14(3^2)$

Step 3: $A = 3.14(9)$

Step 4: $C = 28.26\ in^2$

This answer makes sense because 3 x 9 = 27. π is just a little more than 3, so a little bit more than 27 makes sense.

2 What is the Area of this circle?_____



Think about it:

Which is given, the radius or the diameter?

So, what is the radius?

Work it out:

1. Write the formula.
2. Plug in the numbers.
3. Square the radius. (Multiply radius x radius)
4. Multiply to get the answer.
5. Label the answer with the correct measurement.

Work it out:

Step 1: _____

Step 2: _____

Step 3: _____

Step 4: _____

This answer makes sense because:

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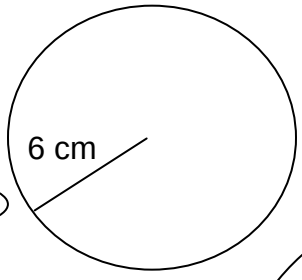
3 What is the Area of this circle?_____



Think about it:

Which is given, the radius or the diameter?

So, what is the radius?

Work it out:

Step 1: _____

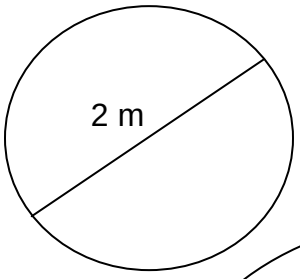
Step 2: _____

Step 3: _____

Step 4: _____

This answer makes sense because:

4 What is the Area of this circle?_____



Think about it:

Which is given, the radius or the diameter?

So, what is the radius?

This answer makes sense because:

Work it out:

Step 1: _____

Step 2: _____

Step 3: _____

Step 4: _____

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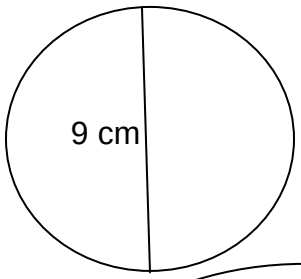
5 What is the Area of this circle?_____



Think about it:

Which is given, the radius or the diameter?

So, what is the radius?

This answer makes sense because:

Work it out:

Step 1: _____

Step 2: _____

Step 3: _____

Step 4: _____

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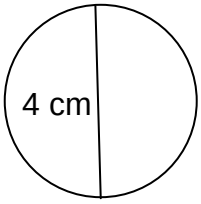
6 Find Area:



Work it out:

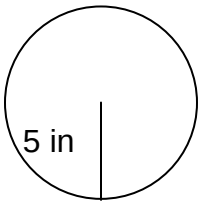
Step 1: _____

Step 2: _____

Step 3: _____

Step 4: _____

7 Find Area:



Work it out:

Step 1: _____

Step 2: _____

Step 3: _____

Step 4: _____

8 Mrs. Davis wants to paint the top of a circular table that has a diameter of 3 feet. How many square feet will be painted?

Think about it:

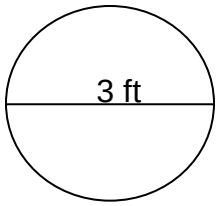
What key words indicate that this is an area problem?

Which is given, the radius or the diameter?

So, what is the radius?

This answer makes sense because:

Draw a picture:



Work it out:

Step 1: _____

Step 2: _____

Step 3: _____

Step 4: _____

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9 Mr. Magoo wants to put a circular rug in his office. His 8 foot long rectangular desk will sit directly across the center of the rug from one side to the other. How big is the rug that Mr. Magoo wants to purchase?

Think about it:

What key words indicate that this is an area problem?

Which is given, the radius or the diameter?

So, what is the radius?

This answer makes sense because:

Draw a picture:

Work it out:

Step 1: _____

Step 2: _____

Step 3: _____

Step 4: _____