

## LAUNCH:

Now use your algebraic skills to solve for  $C$ ...

$$\frac{C}{d} = \pi$$

$$C = \pi d$$

$$C = 2\pi r$$

What is your new equation?

## 5.6

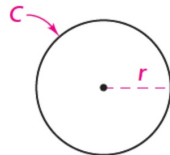
## Circumference

Objective: To develop and use the formula for Circumference

### Theorem 5.6

The circumference of a circle of radius  $r$  is  $2\pi$  times the radius.

$$C = 2\pi r$$



$$A = \pi r^2$$

**For You to Do**  $3.14 \times 2 = 6.28$

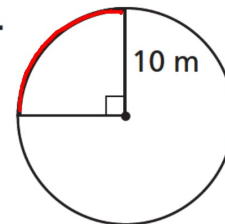
- The circumference of a circle is approximately how many times its radius?
  - five
  - six
  - seven
- The circumference of a circle is approximately how many times its diameter?  $C = \pi d$ 
  - three
  - four
  - five

$$\approx =$$

### Guided Practice:

Find the ~~width~~ length of each indicated arc.

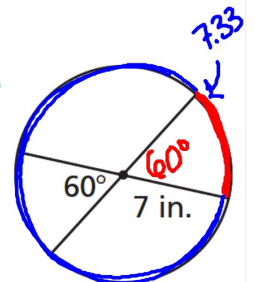
a. use 3.14 for  $\pi$  b.



$$\frac{90}{360} = \frac{1}{4}$$

$$C = 2\pi r = 2(3.14)(10) = 62.8 \text{ m}$$

$$\text{arc length} = 15.7 \text{ m}$$



$$\frac{60}{360} = \frac{1}{6}$$

$$C = 2(3.14)(7) = 43.96 \text{ in}$$

$$\text{arc length} \approx 7.33 \text{ in}$$

For Exercises 1–3, you are given a circle of radius 2 cm. Draw a sector of the given size. The sector determines two arcs on the circle. How long is each arc in centimeters?

1.  $60^\circ$
2.  $30^\circ$
3.  $45^\circ$
4. True or false: The ratio of a circle's circumference to its diameter is the same for all circles. Explain your answer.

The table gives one piece of information about four different circles. Copy the table and find the missing parts for each circle.

Radius	Diameter	Area	Circumference
3	6	$9\pi$	$6\pi$
1.5	3	$1.25\pi$	$3\pi$
0.98	1.96	3	$1.96\pi$
0.48	0.96	$0.23\pi$	3

$$C = 2\pi r$$
$$C = \pi d$$
$$A = \pi r^2$$

$$3 = 3.14d$$
$$A = \pi(0.48)^2$$

### Homework:

Page 383 6 - 8 all You can do this on the backside of the worksheet.

Additional Practice Worksheet 1 - 8 all