

NAME: _____

DATE: _____

CIRCLES & AREA

PERIOD: _____

Applications of Circles

(Topic #10)

Read each question carefully. Show all work in the space. Label your final answer with the appropriate units.

1. Carol wants to put ribbon around the top and bottom of a circular lampshade. The diameter of the shade is 21 inches. How much ribbon is needed? Round your answer to the *nearest hundredth*.

2. A circular track has a diameter of 225 meters. If Ava runs around the outside of the track 4 times, approximately how many meters will she run? Round your answer to the *nearest tenth*.

3. A circus clown rides a unicycle with a wheel that is 30 inches in diameter. Approximately what distance does the unicycle travel if the tire completes 10 revolutions? Show and explain your work.

4. A simple impact crater on the moon has a diameter of 15 kilometers. A complex impact crater has a radius of 30 kilometers. How much greater is the circumference of the complex crater than the simple compact crater?

5. An FM radio signal travels in a 40-mile radius. An AM radio station signal travels in a 4-mile radius. How much more area does the FM station cover than the AM station?

6. The radius of a circle is 7 inches.

a) What is the circumference of the circle? Use $\frac{22}{7}$ for π .

b) Suppose the radius is doubled to 14 inches. What is the circumference of this circle?
Use $\frac{22}{7}$ for π .

c) Explain how doubling the radius affects the circumference.

7. The radius of a circle is 6 inches.

a) What is the area of the circle? Use 3.14 for π .

b) Suppose the radius is doubled to 12 inches. What is the area of this circle?
Use 3.14 for π .

c) Explain how doubling the radius affects the area.

NAME: _____

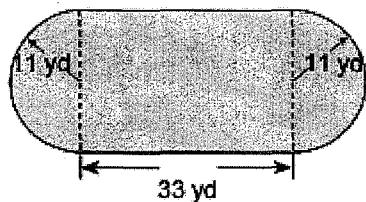
DATE: _____

AREA OF COMPOSITE FIGURES

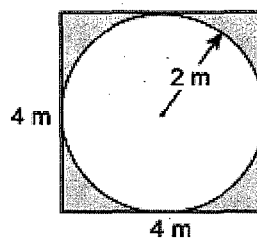
PERIOD: _____

Find the area of each composite figure. Round your answer to the nearest tenth if necessary. Show all work in the box.

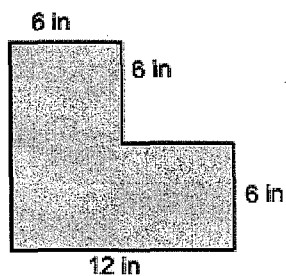
1.

Total Area = _____ yd^2

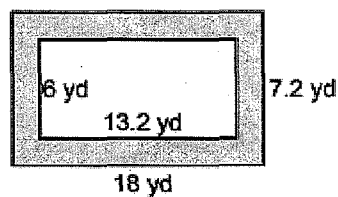
2.

Total Area = _____ m^2

3.

Total Area = _____ in^2

4.

Total Area = _____ yd^2

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Applications of Circles

(Topic #10)

Read each question carefully. Show all work in the space. Label your final answer with the appropriate units.

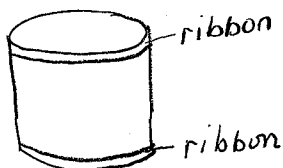
1. Carol wants to put ribbon around the top and bottom of a circular lampshade. The diameter of the shade is 21 inches. How much ribbon is needed? Round your answer to the *nearest hundredth*.

$$d = 21$$

$$C = 2\pi d$$

$$C = 2\pi (21)$$

$$C = 131.95 \text{ in}$$



2. A circular track has a diameter of 225 meters. If Ava runs around the outside of the track 4 times, approximately how many meters will she run? Round your answer to the *nearest tenth*.

$$d = 225 \text{ m}$$

$$C = 4\pi d$$

$$C = 4\pi (225)$$

$$C = 2827.4 \text{ m}$$

3. A circus clown rides a unicycle with a wheel that is 30 inches in diameter. Approximately what distance does the unicycle travel if the tire completes 10 revolutions? Show and explain your work.

$$d = 30 \text{ in}$$

$$C = \pi d (10)$$

$$C = \pi (30)(10)$$

$$C = 942.5 \text{ in}$$

4. A simple impact crater on the moon has a diameter of 15 kilometers. A complex impact crater has a radius of 30 kilometers. How much greater is the circumference of the complex crater than the simple compact crater?

<u>simple impact</u>	<u>complex impact</u>	
$d = 15 \text{ km}$	$r = 30 \text{ km}$	$188.5 - 47.1$
$C = \pi d$	$C = 2\pi r$	141.4
$C = \pi (15)$	$C = 2\pi (30)$	km
$C \approx 47.1$	$C \approx 188.5$	

5. An FM radio signal travels in a 40-mile radius. An AM radio station signal travels in a 4-mile radius. How much more area does the FM station cover than the AM station?

<u>FM radio</u>	<u>AM radio</u>	
$r = 40 \text{ mi}$	$r = 4 \text{ mi}$	$5026.55 - 50.27$
$A = \pi r^2$	$A = \pi r^2$	4976.28 mi
$A = \pi (40)^2$	$A = \pi (4)^2$	
$A \approx 5026.55$	$A \approx 50.27$	

6. The radius of a circle is 7 inches.

a) What is the circumference of the circle? Use $\frac{22}{7}$ for π .

$$r = 7 \text{ in}$$

$$C = 2\pi r$$

$$C = \underline{\hspace{2cm}}$$

$$C = 2 \left(\frac{22}{7} \right) (7)$$

$$C = 44 \text{ in}$$

b) Suppose the radius is doubled to 14 inches. What is the circumference of this circle? Use $\frac{22}{7}$ for π .

$$r = 14$$

$$C = 2\pi r$$

$$C = 2 \left(\frac{22}{7} \right) (14)$$

$$C = 88 \text{ in}$$

c) Explain how doubling the radius affects the circumference.

Doubling the radius, doubles the circumference.

7. The radius of a circle is 6 inches.

a) What is the area of the circle? Use 3.14 for π .

$$r = 6 \text{ in}$$

$$A = \pi r^2$$

$$A = \underline{\hspace{2cm}}$$

$$A = 3.14(6)^2$$

$$A = 113.04 \text{ in}^2$$

b) Suppose the radius is doubled to 12 inches. What is the area of this circle? Use 3.14 for π .

$$r = 12$$

$$A = \pi r^2$$

$$A = \underline{\hspace{2cm}}$$

$$A = 3.14(12)^2$$

$$A = 452.16$$

c) Explain how doubling the radius affects the area.

The area is 4x as big when you double the radius.