

Lesson 9-3

TEKS

7.8C

7.9B

7.1A

Area of Circles

Q How do you find the area of circle?

A Use the formula _____ where A is the _____ and r is the _____ and π is _____ or _____.

Vocab

Square number - _____

How to identify a squared number. _____

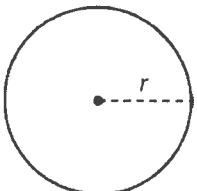
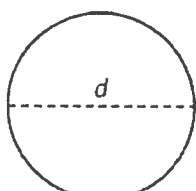
$$\begin{aligned} 1^2 &= \underline{\hspace{2cm}} \\ 2^2 &= \underline{\hspace{2cm}} \\ 3^2 &= \underline{\hspace{2cm}} \\ 4^2 &= \underline{\hspace{2cm}} \\ 5^2 &= \underline{\hspace{2cm}} \end{aligned}$$

$$\begin{aligned} 6^2 &= \underline{\hspace{2cm}} \\ 7^2 &= \underline{\hspace{2cm}} \\ 8^2 &= \underline{\hspace{2cm}} \\ 9^2 &= \underline{\hspace{2cm}} \\ 10^2 &= \underline{\hspace{2cm}} \end{aligned}$$

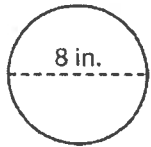
LESSON
9-3

Area of Circles

Reading Strategies: Make Connections

Radius	Diameter
	
$A = \pi r^2$ $\pi \approx 3.14$ or $\frac{22}{7}$	$A = \pi r^2$ $r = \frac{d}{2}$ $A = \pi \left(\frac{d}{2}\right)^2$

Find the area of each circle in terms of π . Then find the estimated area using 3.14 for π .



Think: Do I know the diameter or the radius?
The radius goes across half the circle. The diameter goes across the whole circle.

The diameter. I can find the radius by dividing the diameter by 2.

$$A = \pi r^2$$

$$r = \frac{d}{2}$$

$$A = \pi \left(\frac{8}{2}\right)^2 = \pi \cdot 4^2 = 16\pi$$

In terms of π , the area is $16\pi \text{ in.}^2$
To find the estimated area, use 3.14 for π .

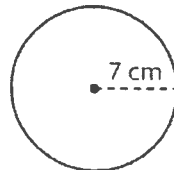
$$A = 16\pi$$

$$= 16 \cdot 3.14$$

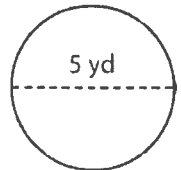
$$= 50.24 \text{ in}^2$$

Find the area of each circle in terms of π . Then find the estimated area using 3.14 for π .

1. _____



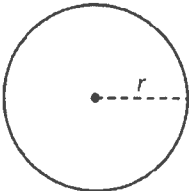
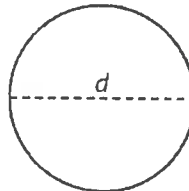
2. _____



LESSON
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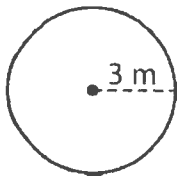
Area of Circles

Success for English Learners

 $A = \pi r^2$ $\pi \approx 3.14 \text{ or } \frac{22}{7}$	 $A = \pi r^2$ $r = \frac{d}{2}$ $A = \pi \left(\frac{d}{2}\right)^2$
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Problem 1

A. The radius is given.



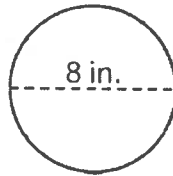
$$A = \pi r^2 \quad r = 3$$

$$A = \pi \cdot 3^2 = 9\pi$$

$$\approx 9 \cdot 3.14$$

$$\approx 28.3 \text{ m}^2$$

B. The diameter is given.



$$A = \pi r^2$$

$$r = \frac{d}{2} = \frac{8}{2} = 4$$

$$A = \pi \cdot 4^2 = 16\pi$$

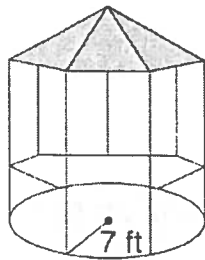
$$\approx 16 \cdot 3.14$$

$$\approx 50.2 \text{ in.}^2$$

Problem 2

Find the area in terms of π .

A. The radius is given.

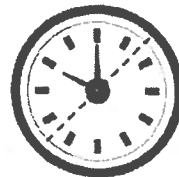


$$A = \pi r^2 \quad r = 7$$

$$A = \pi \cdot 7^2 = 49\pi$$

$$A = 49\pi \text{ ft}^2$$

B. The diameter is given.



$d = 9 \text{ in.}$

$$A = \pi r^2$$

$$r = \frac{d}{2} = \frac{9}{2} = 4.5$$

$$A = \pi \cdot 4.5^2 = 20.25\pi$$

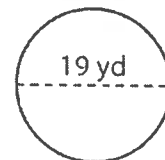
$$A = 20.25\pi \text{ in.}^2$$

Find the area in terms of π . Then use 3.14 for π and find the area to the nearest tenth.

1. _____



2. _____

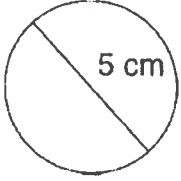


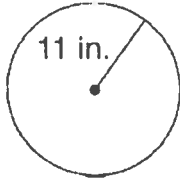
LESSON
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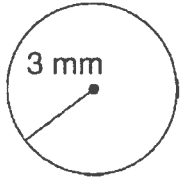
Area of Circles

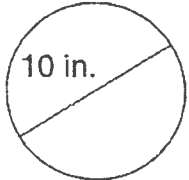
Practice and Problem Solving: D

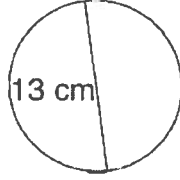
Find the area of each circle to the nearest tenth. Use 3.14 for π . The first problem is done for you.

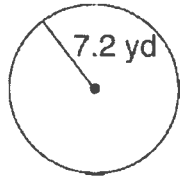
1. 
 19.6 cm²

2. 

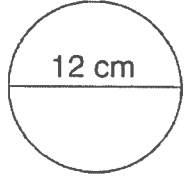
3. 


4. 

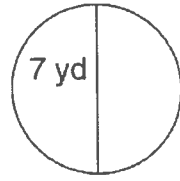
5. 

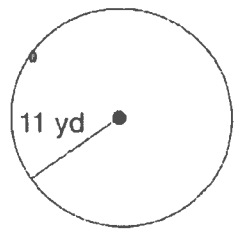
6. 

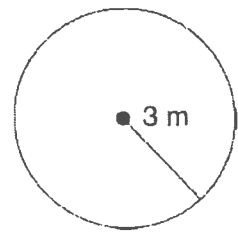
Find the area of each circle in terms of π . The first problem is done for you.

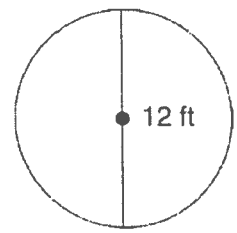
7. 
 36π cm²

8. 

9. 

10. 

11. 

12. 

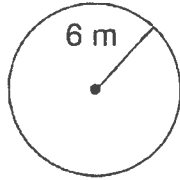
LESSON
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Area of Circles

Practice and Problem Solving: A/B

Find the area of each circle to the nearest tenth. Use 3.14 for π .

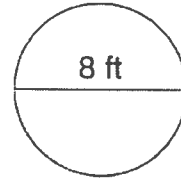
1.



- A 113 m^2
B 37.7 m^2

- C 354.9 m^2
D 452.16 m^2

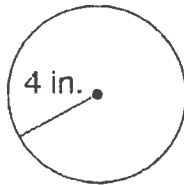
2.



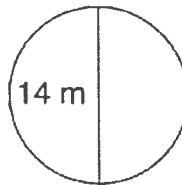
- A 201 ft^2
B 50.2 ft^2

- C 25.1 ft^2
D 157.8 ft^2

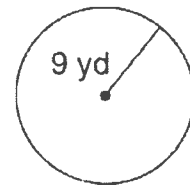
3.



4.

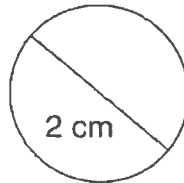


5.

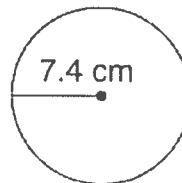


Find the area of each circle in terms of π .

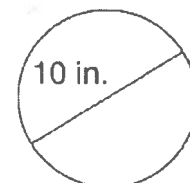
6.



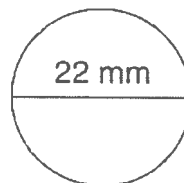
7.



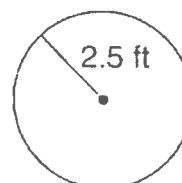
8.



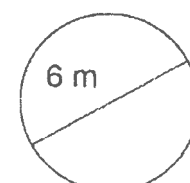
9.



10.



11.



Lesson 9-3

TEKS

7.8C

7.9B

7-1A

Area of Circles

Q How do you find the area of circle?

A Use the formula $A = \pi r^2$ where A is the Area and r is the radius and π is 3.14 or $\frac{22}{7}$.

Vocab

Square number - a number times itself

How to identify a squared number. _____

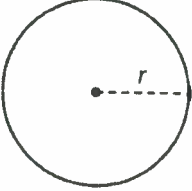
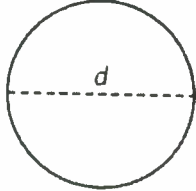
$$\begin{aligned} 1^2 &= \underline{1} && 1 \times 1 \\ 2^2 &= \underline{4} && 2 \times 2 \\ 3^2 &= \underline{9} && 3 \times 3 \\ 4^2 &= \underline{16} && 4 \times 4 \\ 5^2 &= \underline{25} && 5 \times 5 \end{aligned}$$

$$\begin{aligned} 6^2 &= \underline{36} && 6 \times 6 \\ 7^2 &= \underline{49} && 7 \times 7 \\ 8^2 &= \underline{64} && 8 \times 8 \\ 9^2 &= \underline{81} && 9 \times 9 \\ 10^2 &= \underline{100} && 10 \times 10 \end{aligned}$$

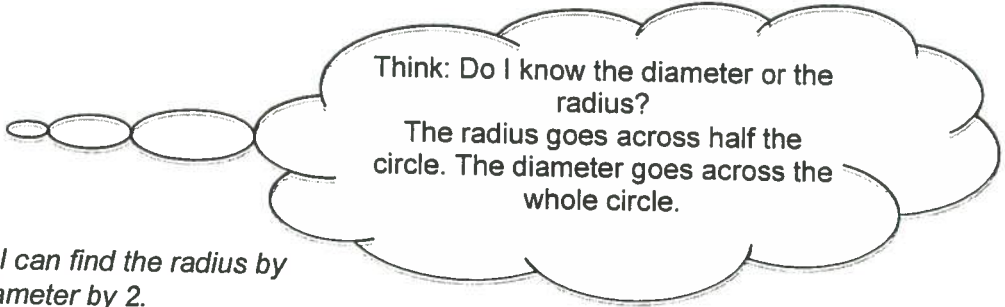
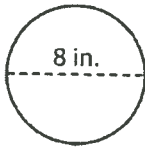
LESSON
9-3

Area of Circles

Reading Strategies: Make Connections

Radius	Diameter
	
$A = \pi r^2$ $\pi \approx 3.14$ or $\frac{22}{7}$	$A = \pi r^2$ $r = \frac{d}{2}$ $A = \pi \left(\frac{d}{2}\right)^2$

Find the area of each circle in terms of π . Then find the estimated area using 3.14 for π .



The diameter. I can find the radius by dividing the diameter by 2.

$$A = \pi r^2$$

$$r = \frac{d}{2}$$

$$A = \pi \left(\frac{8}{2}\right)^2 = \pi \cdot 4^2 = 16\pi$$

In terms of π , the area is $16\pi \text{ in.}^2$
 To find the estimated area, use 3.14 for π .

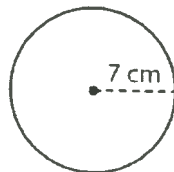
$$A = 16\pi$$

$$= 16 \cdot 3.14$$

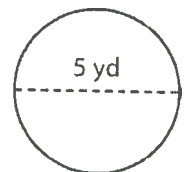
$$= 50.24 \text{ in}^2$$

Find the area of each circle in terms of π . Then find the estimated area using 3.14 for π .

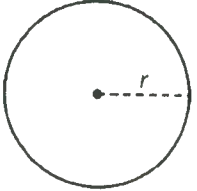
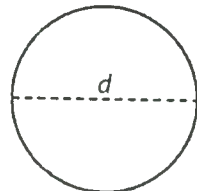
1. $49\pi \text{ cm}^2$
 153.86 cm^2



2. $(6.25)\pi \text{ yd}^2$
 19.625 yd^2

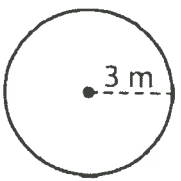


LESSON 9-3 **Area of Circles**
Success for English Learners

 $A = \pi r^2$ $\pi \approx 3.14 \text{ or } \frac{22}{7}$	 $A = \pi r^2$ $r = \frac{d}{2}$ $A = \pi \left(\frac{d}{2}\right)^2$
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Problem 1

A. The radius is given.



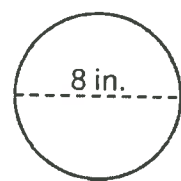
$$A = \pi r^2 \quad r = 3$$

$$A = \pi \cdot 3^2 = 9\pi$$

$$\approx 9 \cdot 3.14$$

$$\approx 28.3 \text{ m}^2$$

B. The diameter is given.



$$A = \pi r^2$$

$$r = \frac{d}{2} = \frac{8}{2} = 4$$

$$A = \pi \cdot 4^2 = 16\pi$$

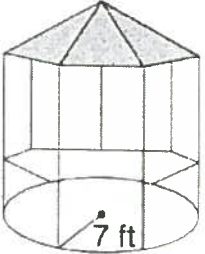
$$\approx 16 \cdot 3.14$$

$$\approx 50.2 \text{ in.}^2$$

Problem 2

Find the area in terms of π .

A. The radius is given.



$$A = \pi r^2 \quad r = 7$$

$$A = \pi \cdot 7^2 = 49\pi$$

$$A = 49\pi \text{ ft}^2$$

B. The diameter is given.



$d = 9 \text{ in.}$

$$A = \pi r^2$$

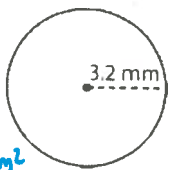
$$r = \frac{d}{2} = \frac{9}{2} = 4.5$$

$$A = \pi \cdot 4.5^2 = 20.25\pi$$

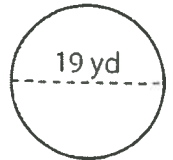
$$A = 20.25\pi \text{ in.}^2$$

Find the area in terms of π . Then use 3.14 for π and find the area to the nearest tenth.

1. $\frac{(3.2)^2 \pi \text{ mm}^2}{10.24 \pi}$
 $10.24(3.14) = 32.2 \text{ mm}^2$



2. $\frac{(9.5)^2 \pi \text{ yd}^2}{90.25 \pi \text{ yd}^2}$
 283.4 yd^2



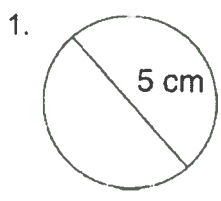
$\frac{19}{2}$

$$\begin{array}{r} 3.2 \\ 3.2 \\ \hline 64 \\ 96 \\ \hline 1024 \end{array}$$

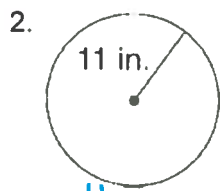
LESSON
9-3 **Area of Circles**

Practice and Problem Solving: D

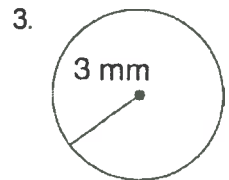
Find the area of each circle to the nearest tenth. Use 3.14 for π . The first problem is done for you. $A = \pi r^2$



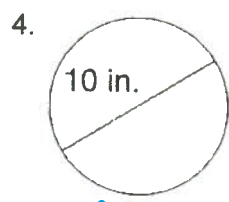
19.6 cm²



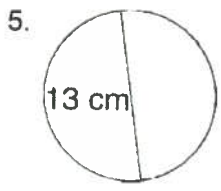
$(11)^2 \cdot 3.14 = 379.94 \text{ in}^2$



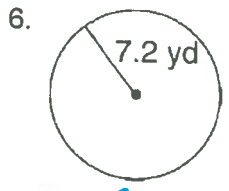
$(3)^2 \cdot 3.14 = 28.26$
28.3 mm²



$(5)^2 \cdot 3.14 = 78.5 \text{ in}^2$

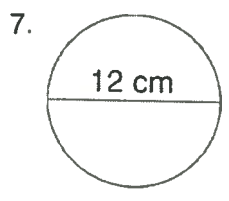


$(6.5)^2 \cdot 3.14 = 132.7 \text{ cm}^2$

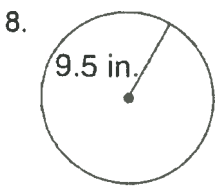


$(7.2)^2 \cdot 3.14 = 162.8 \text{ yd}^2$

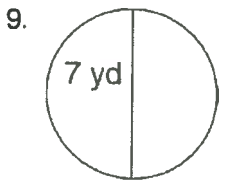
Find the area of each circle in terms of π . The first problem is done for you.



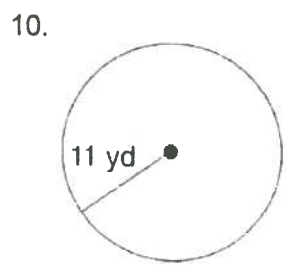
$36\pi \text{ cm}^2$



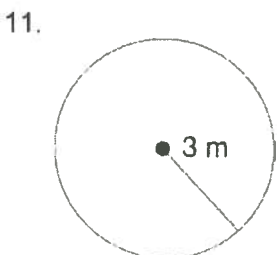
$90.25\pi \text{ in}^2$



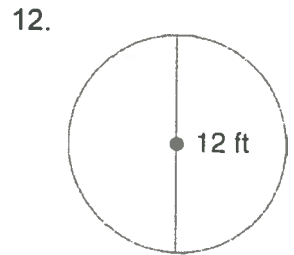
$12.25\pi \text{ yd}^2$



$121\pi \text{ yd}^2$



$9\pi \text{ m}^2$



$36\pi \text{ ft}^2$