

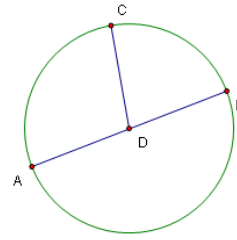
9.4 Circles and Arcs

NOTES

Write your questions here!



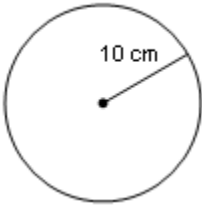
Circle:



Area of a Circle =

Circumference =

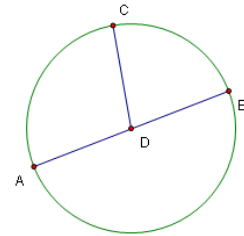
TRY IT!

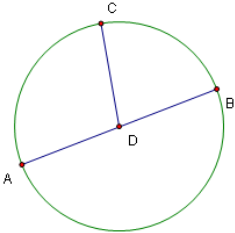
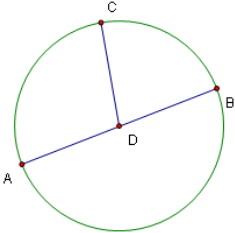
Approximate = decimal solution		Exact = leave in terms of pi	
Find the area.	Find d . Area = 28cm^2	Find the circumference.	Find r . $C =$
			

Central Angle:

Arcs:

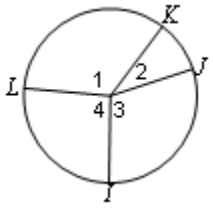
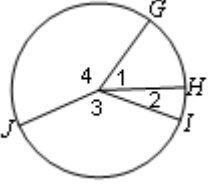
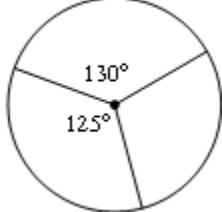
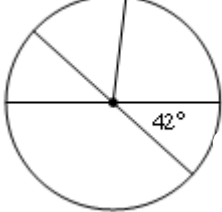
Semicircle:



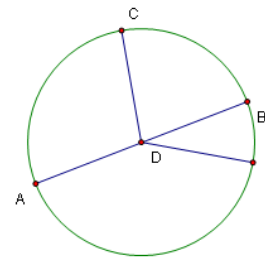
TERM	Name it	Picture
A minor arc is		
A major arc is		

Write your questions here!

TRY IT!

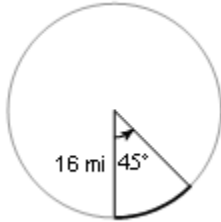
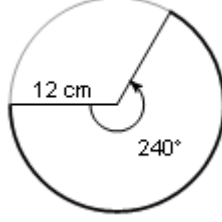
Name it!		Find it!	
 <p>Arc for \angle</p> <p>Major arc for \angle</p>	 <p>Central angle formed</p> <p>by</p> <p>by</p>		

Measure of the Arc Length =



TRY IT!

Arc Length =

Approximate = decimal solution	Exact = leave in terms of pi
	

Summarize your notes!

9.4 PRACTICE

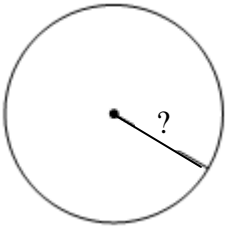
Draw the picture. Find the area and circumference. Label your answer! Round to the nearest tenth.

1. Circle with radius of 5 m.

2. Circle with diameter of 12.5 ft.

Find the missing part of the circle. Label your answer! Round to the nearest tenth.

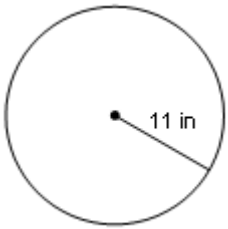
3. Find the radius given a circle with circumference 18 ft.



4. Find the diameter given a circle with area 196 yd^2

Find the circumference of each. Label your answer! Round to the nearest tenth.

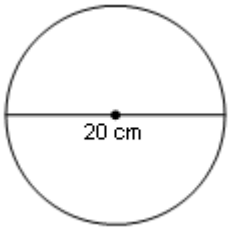
5.



6. Circle with area of 16.6 cm^2

Find the area of each. Label your answer! Express your answer in terms of pi.

7.



8. Circle with circumference of $24\pi \text{ cm}$

Draw the following.

9. Circle P with $m\widehat{AB} = 50$ and radius of 4 cm.

10. Circle K with semicircle \widehat{EFG} and diameter of 12 in.

Name the arc made by the given central angle.

11.
 $\angle 2$

12.
Major arc for $\angle I$

13.
 $\angle SQT$

14.
Major arc for $\angle YQX$

Name the central angle of the given arc.

15.
 \widehat{GJ}

16.
 \widehat{GIF}

17.
 \widehat{FGI}

18.
 \widehat{ZY}

Find the measure of the arc. Assume that line segments which appear to be diameters are.

19.

20.
 $m\widehat{UT}$

21.
 $m\widehat{STR}$

22.
 $m\widehat{SU}$

Find the length of each arc. Label your answer! Express your answer in terms of pi.

23.

24.
 $r = 11 \text{ m}, \theta = 150^\circ$

Find the length of each arc. Label your answer! Round to the nearest tenth.

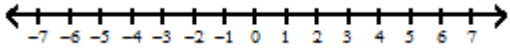
25.

26.
 $r = 7 \text{ km}, \theta = 165^\circ$

ALGEBRA REVIEW

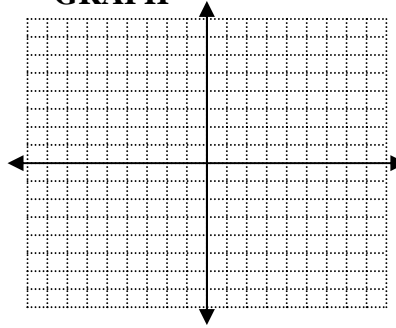
SOLVE

$$5 - 2(3 + 3x) < 35$$



GRAPH

$$2y = 2x - 8$$

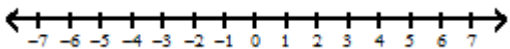


MULTIPLY

$$(4x - 5)(3x + 4)$$

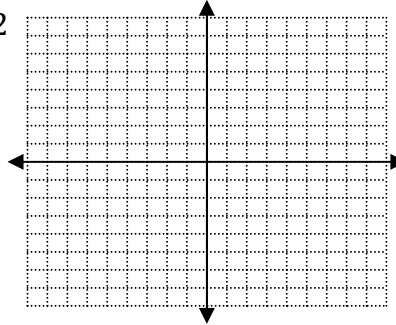
SOLVE

$$4x - 5 \geq -15 - 6x$$



GRAPH

$$4x - 3y \leq 12$$



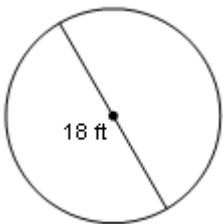
FACTOR

$$2x^2 + 5x - 12$$

9.4 APPLICATION

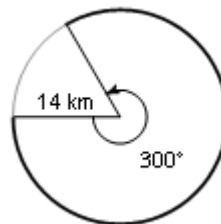
1. Find the area and circumference.

Label your answer! Leave in terms of pi.



2. Find the length of each arc. Label your answer!

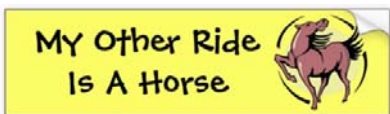
Round to the nearest tenth.



Watch the application walk through video if you need extra help getting started!

3. Mr. Kelly loves to ride horses. He even has a bumper sticker that says “Horse lovers are STABLE people”. To train his horses he uses a circular ring with radius of 12 meters. Mr. Kelly stands in the middle of the circle yelling, “Canter you move any faster?” as the horse runs circles around him.

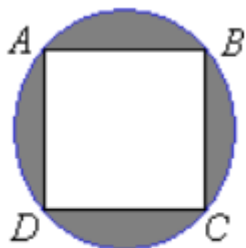
a. If the horse runs 30 laps around the ring, how far will the horse have travelled?



b. A stubborn horse will only run three fifths of a lap. How far did it go?

4. **SAT PREP** Below are sample SAT questions. The SAT is the main standardized test that colleges look at for admission. One is multiple choices; the other is free response where you must grid in your answer. Blow it up.

MULTIPLE CHOICE



The square $ABCD$ touches the circle at 4 points. The length of the side of the square is 2 cm. Find the area of the shaded region.

- (A) $\pi - 4$
- (B) $2\pi - 4$
- (C) $3\pi - 4$
- (D) $4\pi - 4$
- (E) $5\pi - 4$

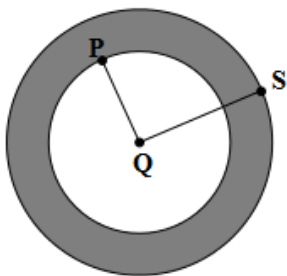
GRID IN

The diameter of circle A is one quarter the diameter of circle B. The area of circle B is how many times greater than the area of circle A ?

	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

5. **SHADED REGION** Find the area of the shaded region.

$QP = 8$ ft and $QS = 12$ ft
Leave in terms of pi.



AC is the diameter
 $AC = 26$ and $BC = 24$

