Name:

Unit 4: Line Segments in Circles & Volume

I CAN:

- Apply theorems involving circles and segments, including chords, diameters, radii, tangents and secants (intersecting inside and outside the circle), to solve problems
- Apply the Pythagorean Theorem to find missing parts of a right triangle, and to determine whether a line is tangent to a circle
- Calculate the volume of a prism, cylinder, cone, pyramid, cube and sphere
- Calculate the surface area of a sphere
- Describe and apply Cavalieri's Principle

Day 1	Segment Lengths and Chord Theorems		
Day 2	Tangent/Radius and Tangent/Tangent (Party Hat) Problems		
Day 3	Chords Intersecting Inside the Circle		
Day 4	Secants and Tangents Intersecting Outside the Circle		
Day 5	QUIZ / Calculating Volume of a Cylinder and Prism		
Day 6	Calculating Volume of a Pyramid and Cone		
Day 7	Composites and Cavalieri's Principle		
Day 8	QUIZ / Cross Sections / Review		
Day 9	Review		
Day 10	Unit 4 Test		

THIS PLAN IS SUBJECT TO CHANGE. PLEASE REFER TO CLASS NOTES AND BLOG FOR UPDATES.

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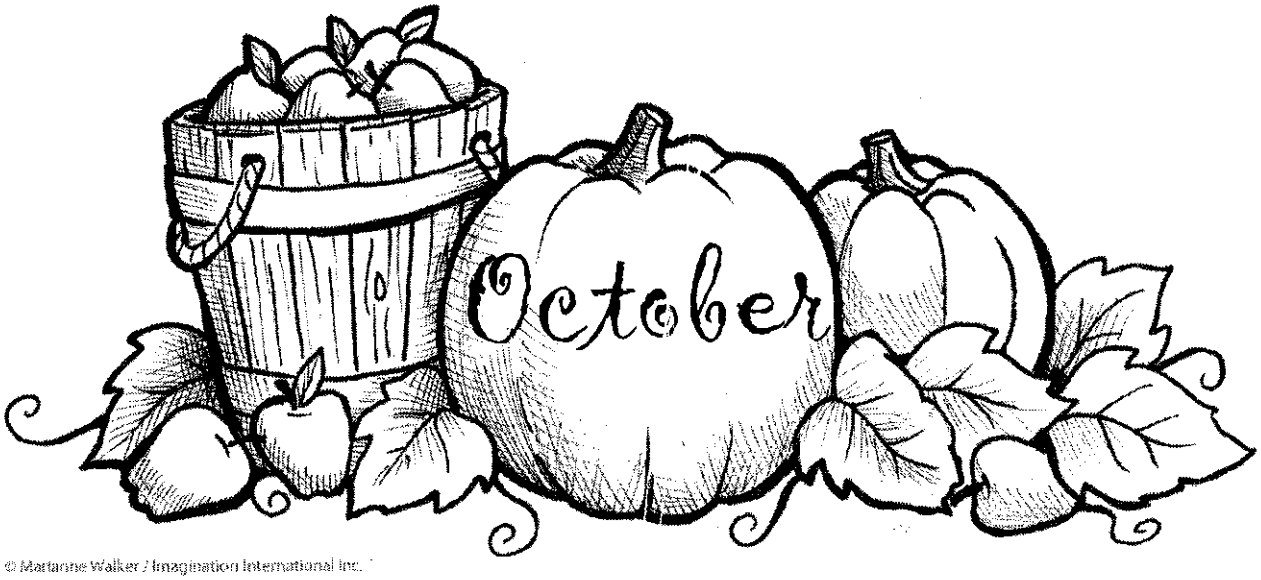

Monday	Tuesday	Wednesday	Thursday	Friday
30 Segment Lengths and Chord Theorems	1 Tangent/Radius Problems and Tangent/Tangent (Party Hat) Problems	2 Chords Intersecting Inside a Circle	3 Secants and Tangents Intersecting Outside the Circle	4 **CTLS Quiz – Segments in Circles** Calculating Volume of Cylinder and Prism
7 Calculating Volume of a Pyramid and Cone	8 Composites and Cavalieri's Principle	9 **Quiz – Volume** Cross Sections & Review	10 EARLY RELEASE Review	11 **Unit 4 Test**

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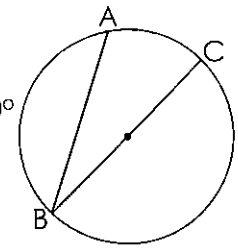
In the circle shown, $\overline{BC}$ is the diameter and the $m\widehat{AB} = 120°$. What is the $m\angle ABC$?

A. 15°

B. 30°

C. 60°

D. 120°



1

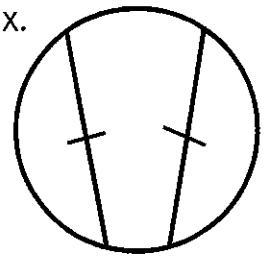
Chord Properties and Segments Lengths in Circles

2

If two chords are _____, then their corresponding _____ are _____.

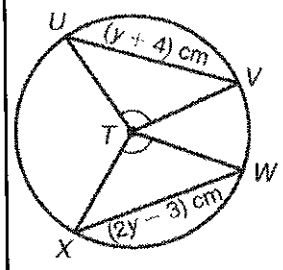
3

Solve for x.



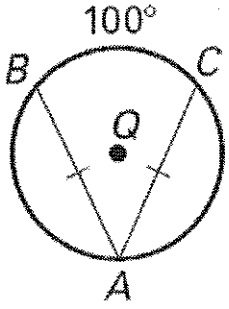
4

Find the length of *WX*.



5

Find $m\widehat{AB}$

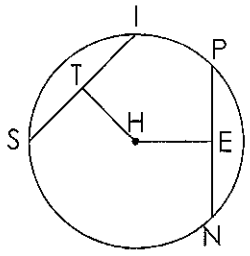


6

If two chords are _____, then they are _____ from the center.

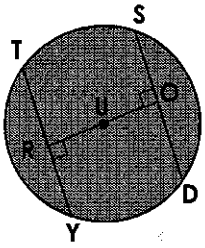
7

In ⊙H, $\widehat{IS} \cong \widehat{PN}$, $m\overline{TH} = 3x - 11$, and $m\overline{EH} = 4x - 31$. What is the value of x?



8

In ⊙U, U is the midpoint of OR. If **TY = -3x + 56** and **SD = 4x**, find the length of TY.



9

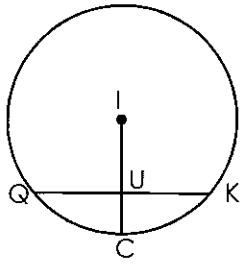
If a diameter is _____ (makes a right angle) to a chord, then it also _____(cuts in half) the chord.

This also results in _____ arcs .

A right triangle can also be formed so you may have to use the _____ _____.

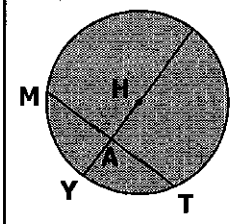
10

IN ⊙I, $\widehat{QC} \cong \widehat{KC}$. If UK = 2x + 3 and UQ = 4x, find x.



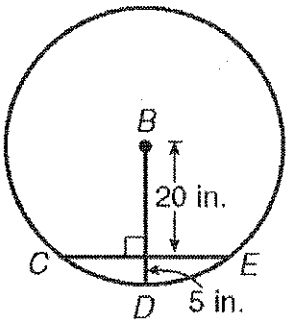
11

In ⊙H, if $\overline{HY} \perp \overline{MT}$, $m\overline{HA} = 6$, and $m\overline{HT} = 10$, find $m\overline{MT}$.



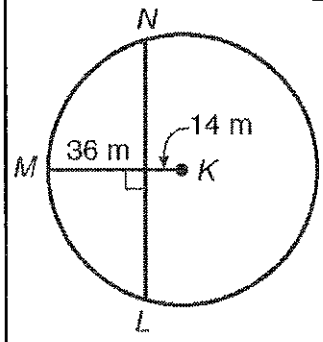
12

Find the length of CE.



13

Find the length of LN.

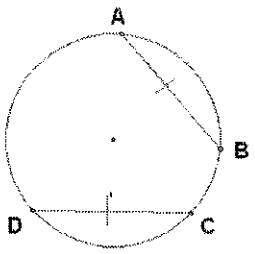


14

Properties of Chords

Name _____ Date_____

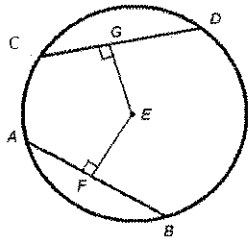
Use the following image for problems 1 and 2.



1. If $m\widehat{AB} = 100^o$, what is $m\widehat{DC}$?

2. If $m\widehat{AB} = 67^o$ and $m\widehat{BC} = 35^o$. What is the $m\widehat{AD}$?

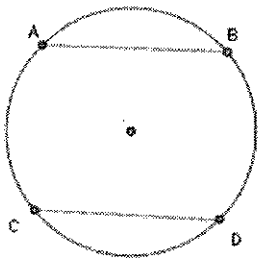
Use the following image for questions 3 and 4.



3. If $\widehat{CD} \cong \widehat{AB}$, $m\overline{EG} = 12\ yd.$, what is the $m\overline{EF}$?

4. If $\overline{EG} \cong \overline{EF}$ and $m\overline{AB} = 24\ m$, what is the $m\overline{CD}$?

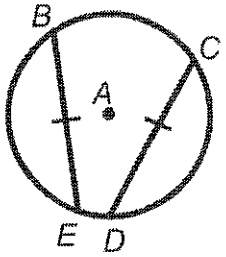
Use the following image for questions 5 and 6.



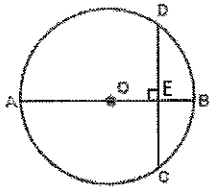
5. If $m\widehat{AB} = 98^o$, $m\overline{AB} = 14\ ft.$ and $m\widehat{CD} = 98^o$, what is the $m\overline{CD}$?

6. if $m\overline{AB} \cong m\overline{CD}$, $m\widehat{AC} = 104^o$,and $m\widehat{BD} = 100^o$ what is the $m\widehat{AB}$?

7. How could you determine that$\widehat{BE} \cong \widehat{CD}$ in the following image?



Use the following image for the problems 8, 9 and 10.

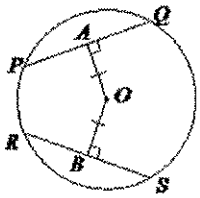


8. If $m\widehat{DB} = 92^o$, what is $m\widehat{DC}$?

9. If the $m\overline{OE} = 10\ cm$ and $m\overline{OA} = 15\ cm$, what is the $m\overline{BE}$?

10. If $m\overline{AB} = 10\ in.$, $m\overline{EB} = 2\ in.$, what is the $m\overline{DE}$?

Use the following image for problems 11, 12 and 13.



11. If $m\overline{PQ} = 15\ in.$, what is the $m\overline{RB}$?

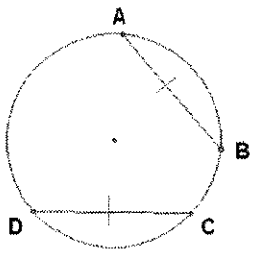
12. If $m\widehat{PQ} = 90^o$, $m\widehat{QS} = 140^o$, what is the $m\widehat{RP}$?

13. If $m\overline{OB} = 10\ cm$ and $m\overline{AQ} = 24\ cm$, what is $m\overline{OQ}$?
(note: $\overline{OQ}$ is not drawn, but you may draw it in.)

Properties of Chords

Name _____ Date_____

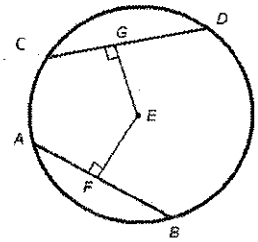
Use the following image for problems 14 and 15.



14. If $m\widehat{AB} = 2x + 27$ and $m\widehat{DC} = 4x - 39$ What is the value of x?

15. If $m\widehat{AB} = 67^o$ and $m\widehat{AD} = 135^o$. What is the $m\widehat{BC}$?

Use the following image for questions 16-18.

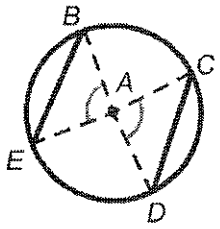


16. If $\overline{CD} \cong \overline{AB}$, $m\overline{EG} = x + 9$, and $m\overline{EF} = 9x - 7$ What is the value of x?

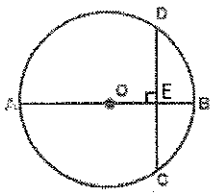
17. If $m\overline{AF} = 10x + 2$ and $m\overline{BF} = 8x + 8$, what is the $m\overline{AB}$?

18. If $\overline{EG} \cong \overline{EF}$ and $m\widehat{CD} = 4x + 15$ and $m\widehat{AB} = 6x - 21$, what is the value of x?

19. How could you determine that $\overline{BE} \cong \overline{CD}$ in the following image?



Use the following image for the problems 20-22.

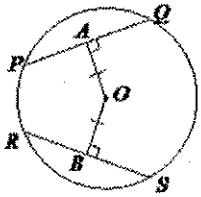


20. If $m\widehat{DB} = 14x - 12$ and $m\widehat{CB} = 2x + 36$, what is $m\widehat{DC}$?

21. If the radius of the circle is 15 m and $m\overline{DE} = 12m$, what is the $m\overline{OE}$?

22. If $m\overline{OE} = 5$ and $m\overline{OA} = 13$, what is the $m\overline{DC}$?

Use the following image for problems 23 and 24.

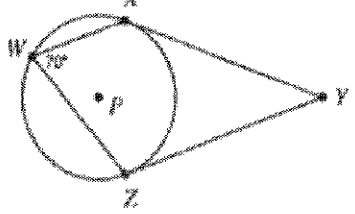


23. If $m\overline{PQ} = 5x + 2$ and $m\overline{RS} = 3x + 12$ what is the $m\overline{RB}$?

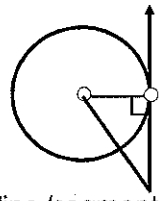
24. If $m\widehat{PQ} = 87^o$, $m\widehat{RP} = 43^o$ and $m\widehat{QS} = 7x + 3$ What is the value of x?

Circle with center P has tangents $\overline{XY}$ and $\overline{ZY}$ and chords $\overline{WZ}$, as shown in the figure. The $m\angle ZWX = 70^o$. What is the $m\angle XYZ$?

A. 20° B. 35° C. 40° D. 55°



1



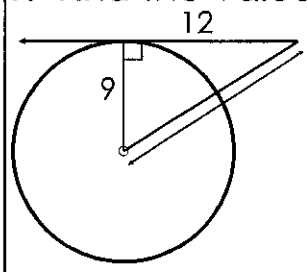
Point of Tangency

If a line (segment or ray) is tangent to a circle, then it is _____ to the radius the point of tangency.

What formula can be used with a right triangle?

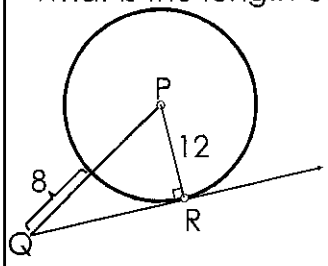
2

1. Find the value of x.



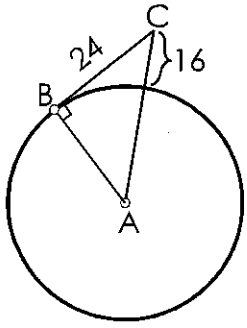
3

What is the length of $\overline{RQ}$?



4

What is the radius of $\odot A$?



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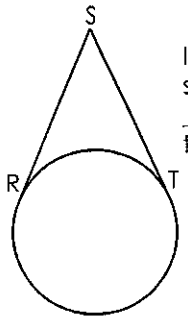
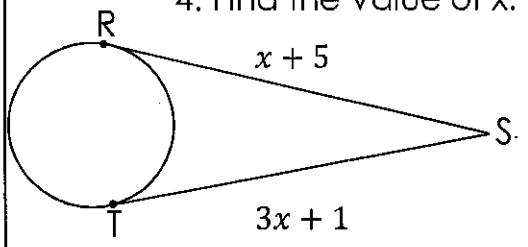


$\overline{RS} \cong \overline{TS}$

If two segments from the same _____ point are _____ to a circle, then they are _____.

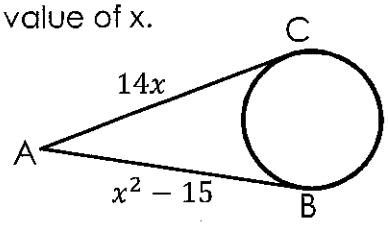
6

4. Find the value of x.



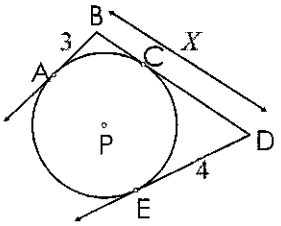
7

Find the value of x.



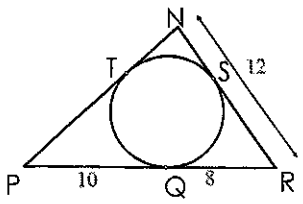
8

Find the value of x.



9

What is the length of $\overline{NP}$?



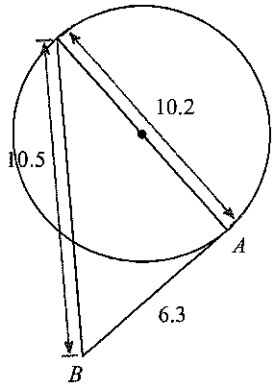
10

Geometry Name_____

Date_____ Period____

Determine if line AB is tangent to the circle.

1)



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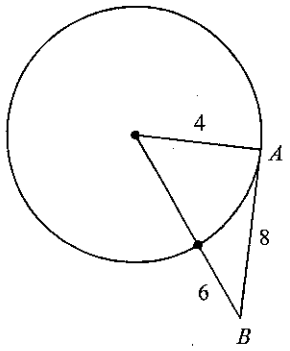
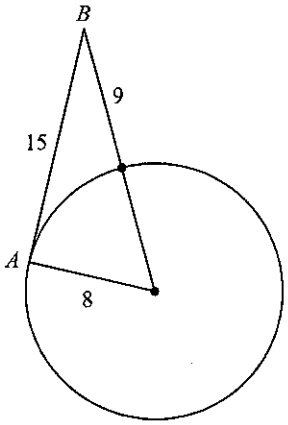


3)



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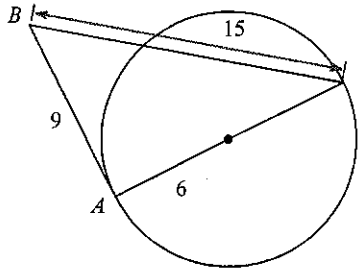
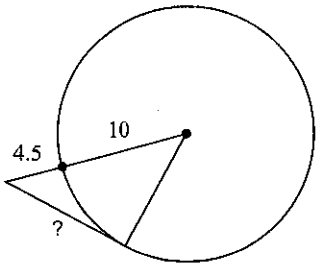


Find the segment length indicated. Assume that lines which appear to be tangent are tangent.

5)



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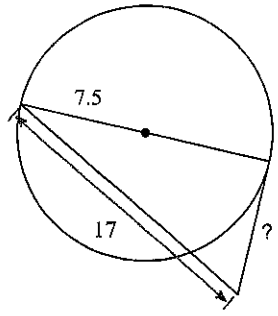

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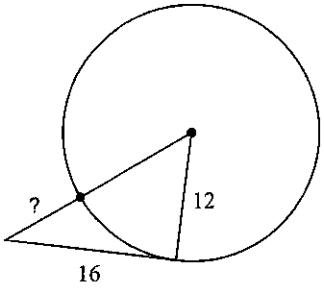

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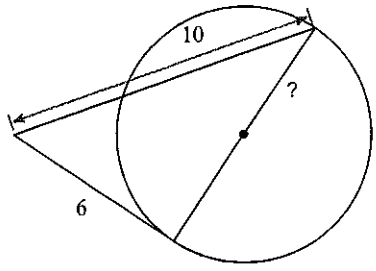
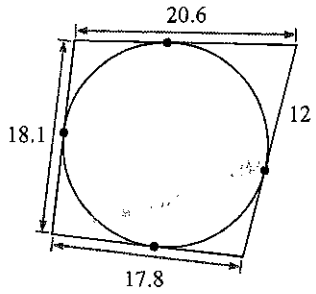


8

Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.

9)



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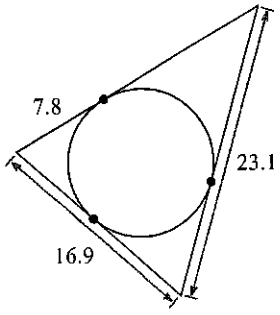

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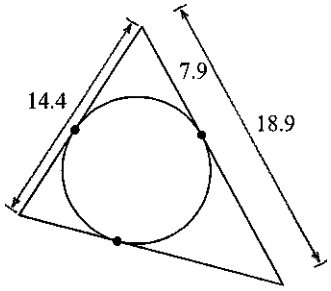
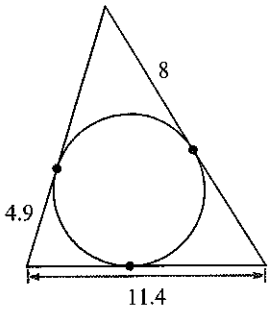
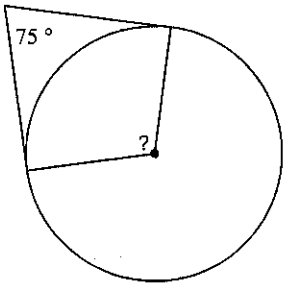


12)

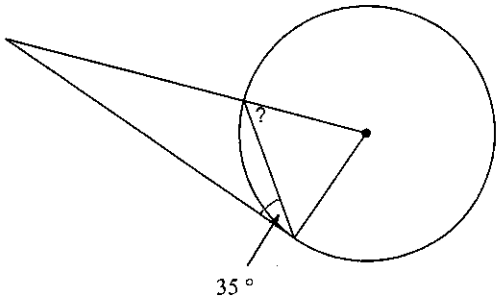


Challenge Problems: Find the angle measure indicated. Assume that lines which appear to be tangent are tangent.

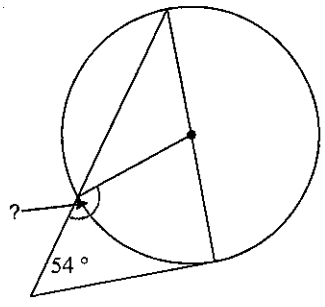
13)



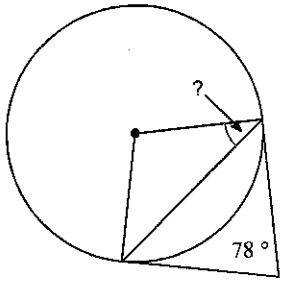
14)



15)



16)



9

GSE Geometry

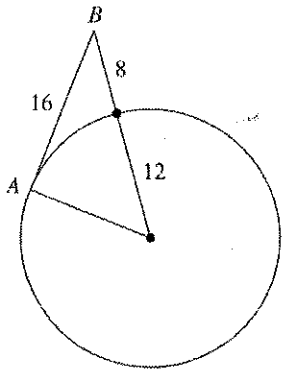
Name_____

Tangents to Circles

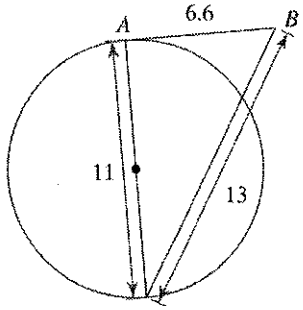
Date_____ Period____

Determine if line AB is tangent to the circle.

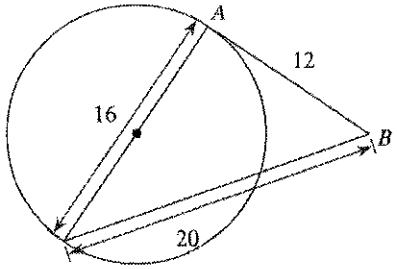
1)



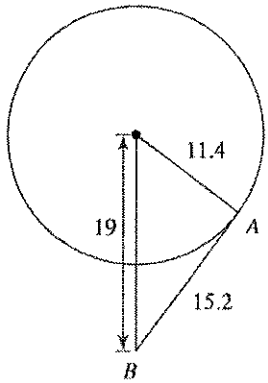
2)



3)

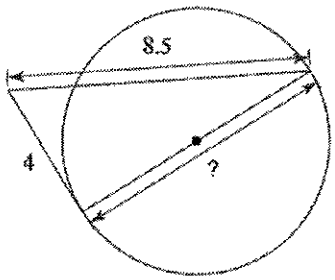


4)

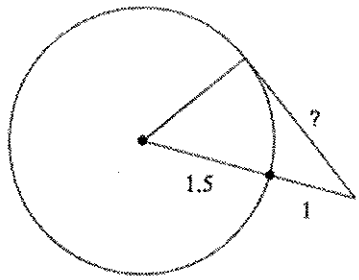


Find the segment length indicated. Assume that lines which appear to be tangent are tangent.

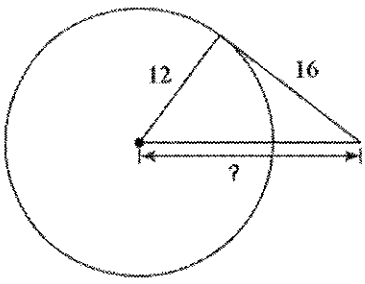
5)



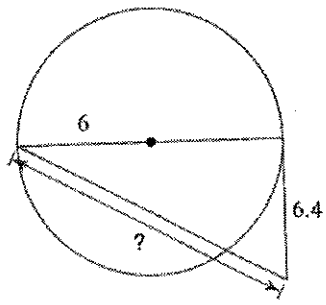
6)



7)

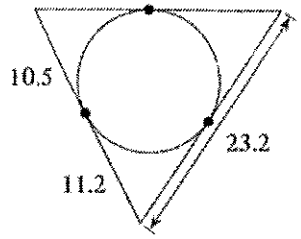


8)

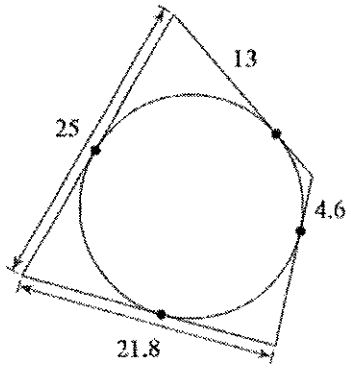


Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.

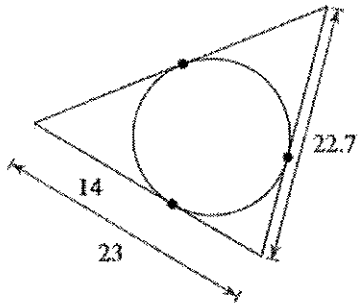
9)



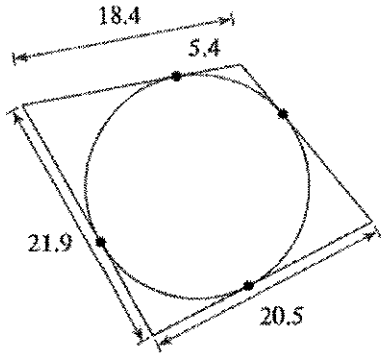
10)



11)



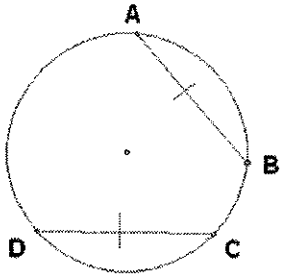
12)



Properties of Chords Recap: Find the value indicated for each.

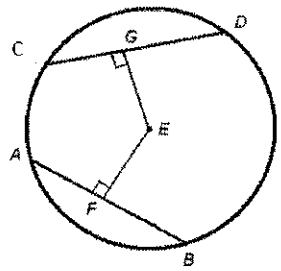
13) If $m\widehat{AB} = 84^o$ and $m\widehat{BC} = 45^o$,

what is the $m\widehat{AD}$?



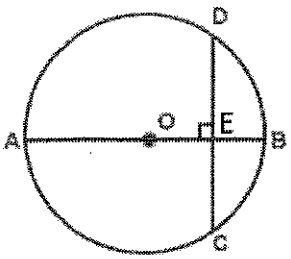
14) If $\overline{EG} \cong \overline{EF}$ and $m\overline{AB} = 24\ m$,

what is the $m\overline{CG}$?

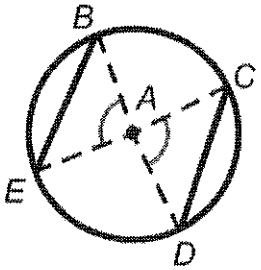


15) If $m\overline{OB} = 15\ ft$ and $m\overline{DC} = 24\ ft$,

what is the $m\overline{OE}$?

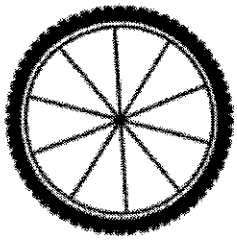


16) How could it be determined that $\overline{EB} \cong \overline{DC}$ in in the following image?



The spokes of a bicycle wheel form 10 congruent central angles. The diameter of the circle formed by the outer edge of the wheel is 18 inches. What is the length, to the nearest 0.1 inch, of the outer edge of the wheel between two consecutive spokes?

A. 1.8 inches
B. 5.7 inches
C. 11.3 inches
D. 25.4 inches



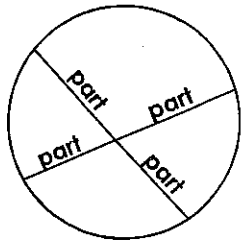
1

Segment Lengths in Circles

Two chords intersect

_____

the circle

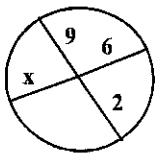


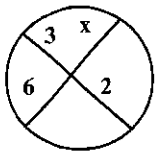
(_____) (_____) = (_____) (_____)

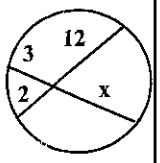
Go down the chord and _____

2

Examples:

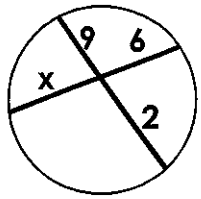






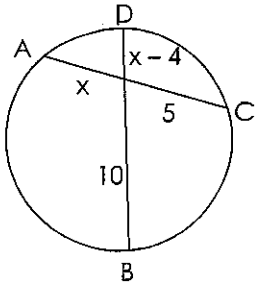
3

You try. Solve for x.



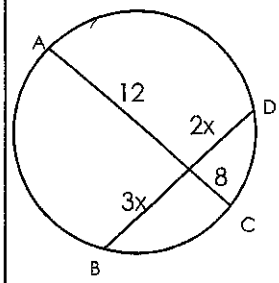
4

Find the length of AC and DB.



5

Find the length of $\overline{DB}$.



6

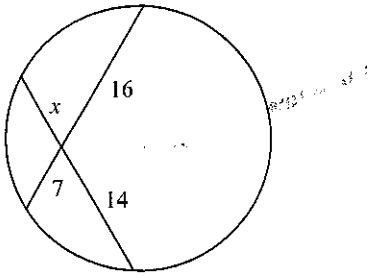
Geometry Name_____ ID: 1

Assignment

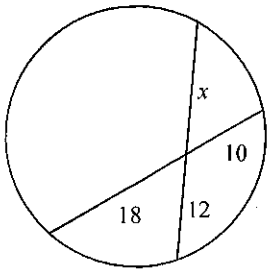
Date_____ Period____

Solve for *x*. Assume that lines which appear tangent are tangent.

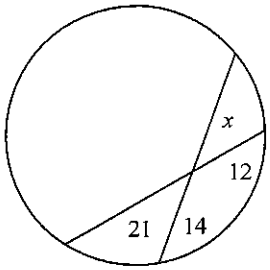
1)



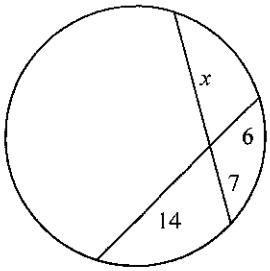
2)



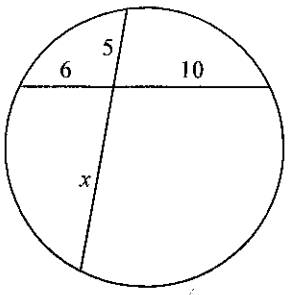
3)



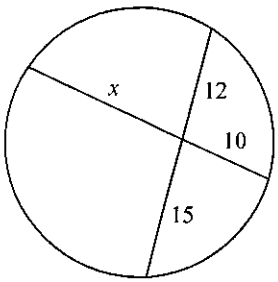
4)



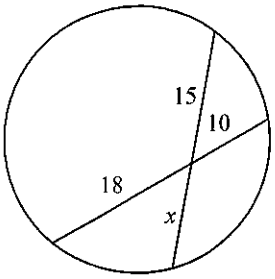
5)



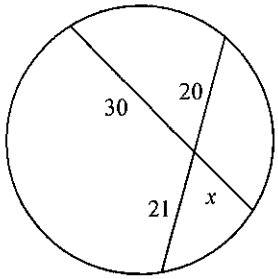
6)



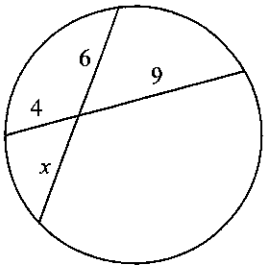
7)



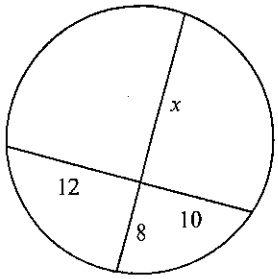
8)



9)



10)



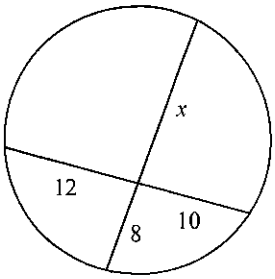
Geometry Name_____ ID: 1

Chords in Circles

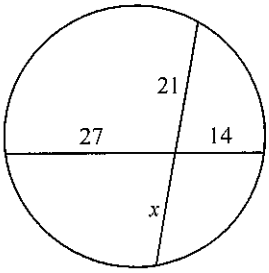
Date_____ Period____

Solve for x. Assume that lines which appear tangent are tangent.

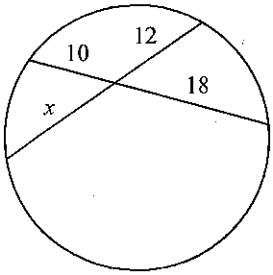
1)



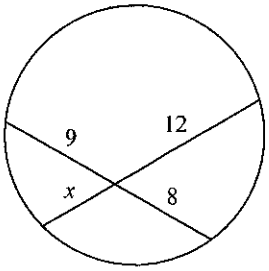
2)



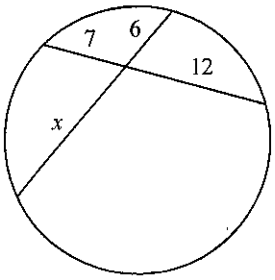
3)



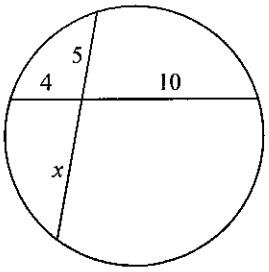
4)



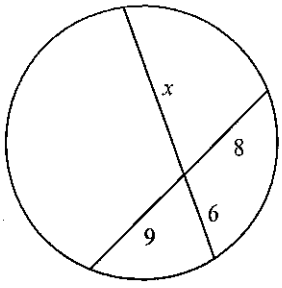
5)



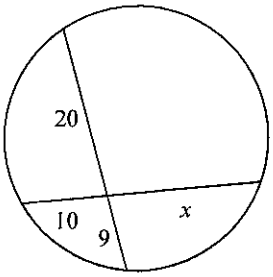
6)



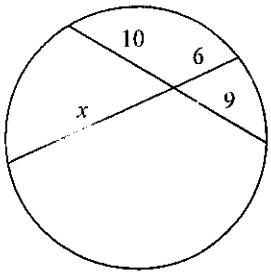
7)



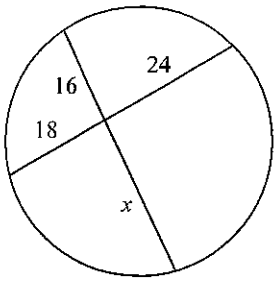
8)



9)

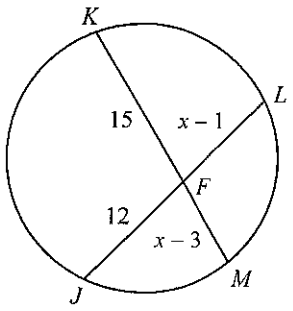


10)

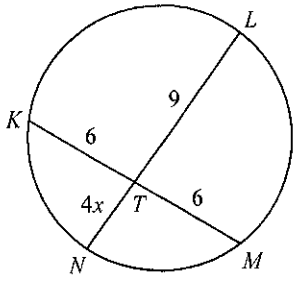


Find the measure of the line segment indicated. Assume that lines which appear tangent are tangent.

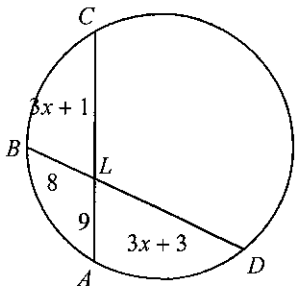
11) Find *FM*



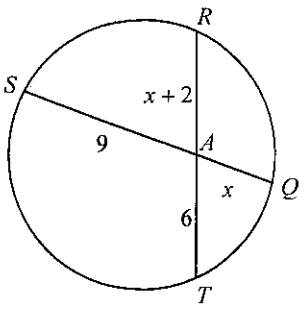
12) Find *LN*



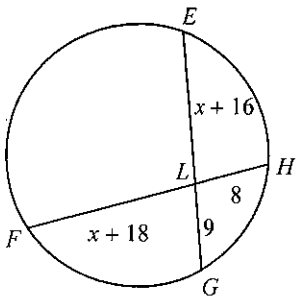
13) Find *BD*



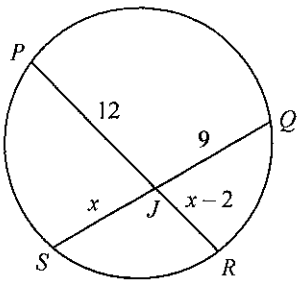
14) Find *SQ*



15) Find *LE*

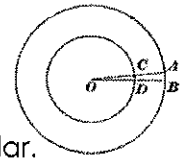


16) Find *JS*



15

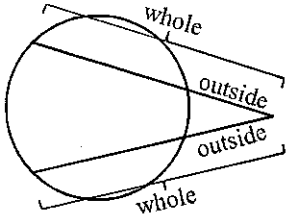
Use the provided image to determine which of the following statements is NOT true.



A. $m\widehat{AB} = m\widehat{CD}$
B. $\widehat{AB} > \widehat{CD}$.
C. The two circles are similar.
D. The two circles are congruent.

1

Two secants intersect OUTSIDE the circle.

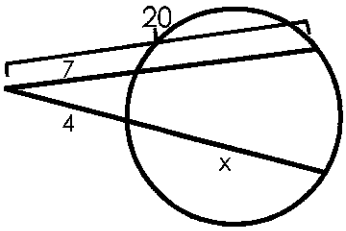


_____(_____)=_____(_____)

Sometimes you have to _____ to get the whole.

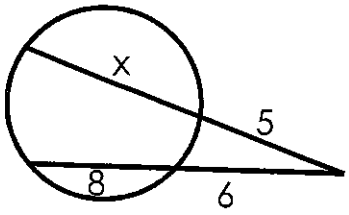
2

Solve for x.



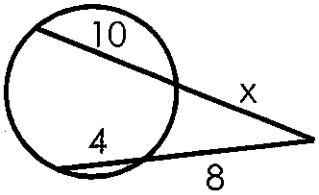
3

Solve for x.



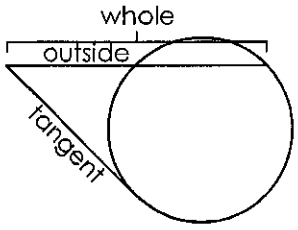
4

Solve for x.



5

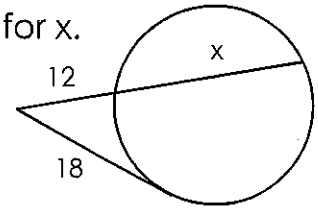
Secant And Tangent



(_____)^2 = _____(_____)

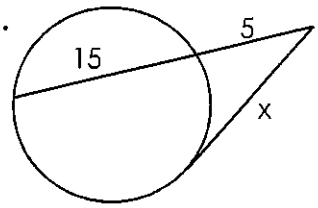
6

Solve for x.



7

Solve for x.



8

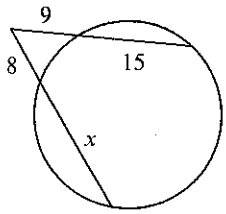
Geometry Name_____ ID: 1

Secants and Tangents

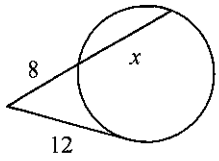
Date_____ Period____

Solve for x. Assume that lines which appear tangent are tangent.

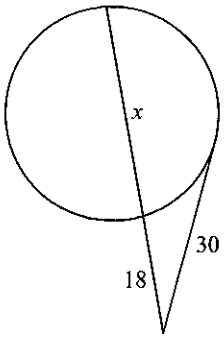
1)



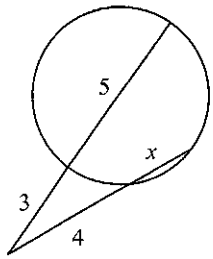
2)



3)

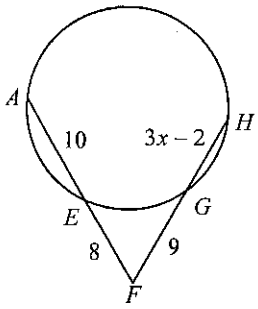


4)

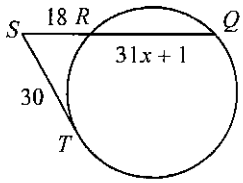


Find the measure of the line segment indicated. Assume that lines which appear tangent are tangent.

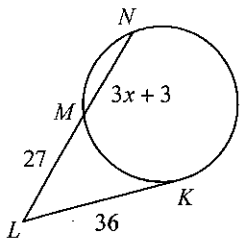
5) Find HF



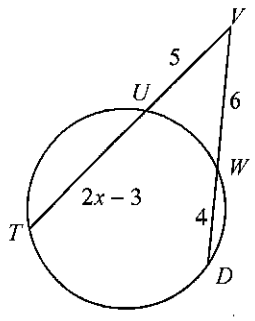
6) Find SQ



7) Find MN

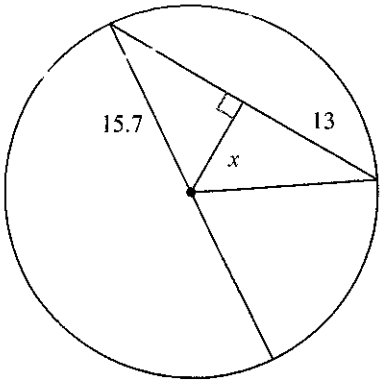


8) Find TU

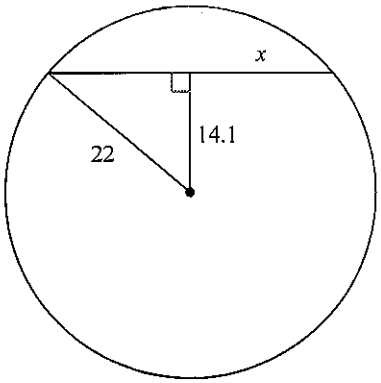


Find the length of the segment indicated. Round your answer to the nearest tenth if necessary.

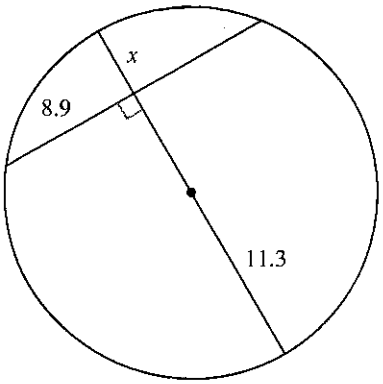
9)



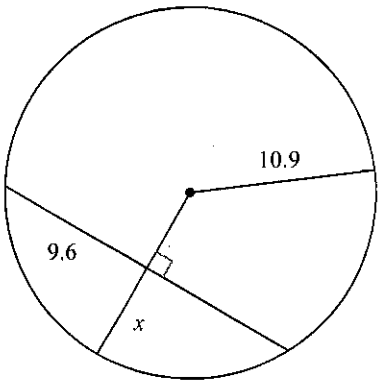
10)



11)

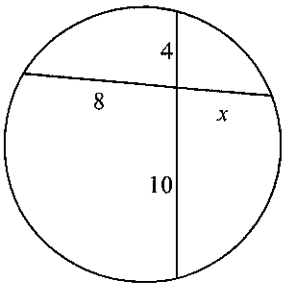


12)

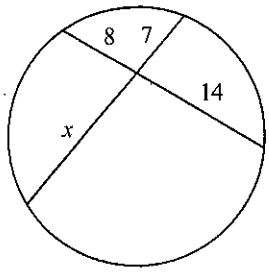


Solve for *x*. Assume that lines which appear tangent are tangent.

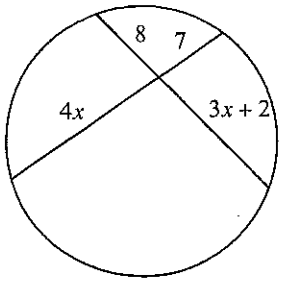
13)



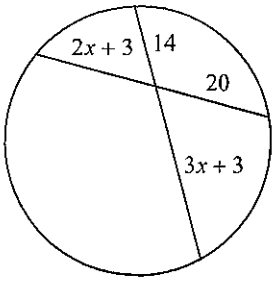
14)



15)



16)

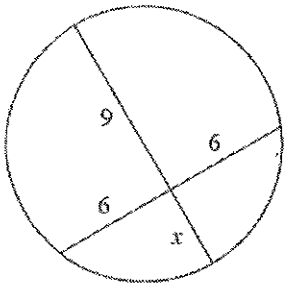


Geometry Name_____

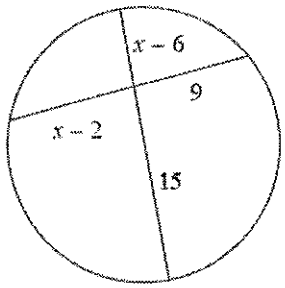
Review for Segments In Circles

Solve for *x*. Assume that lines which appear tangent are tangent.

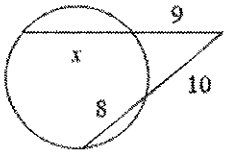
1)



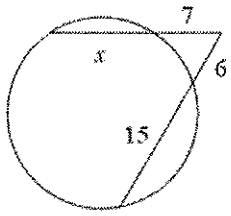
2)



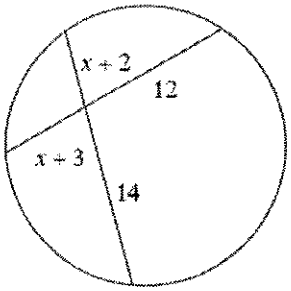
3)



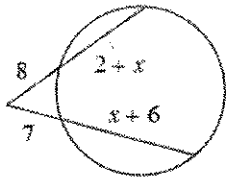
4)



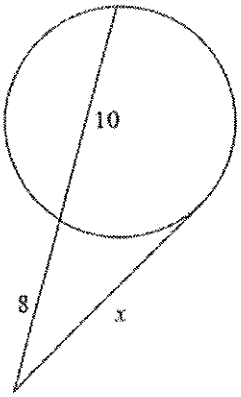
5)



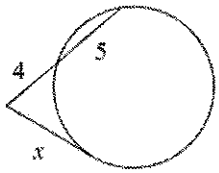
6)



7)

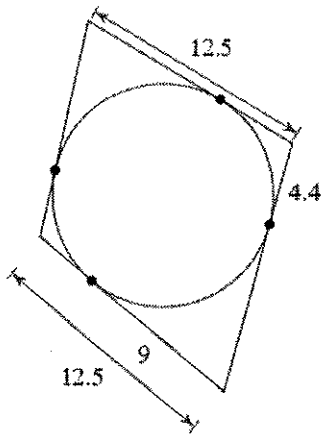


8)

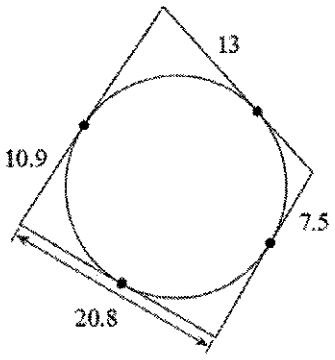


Find the perimeter of each polygon. Assume that lines which appear to be tangent are tangent.

9)

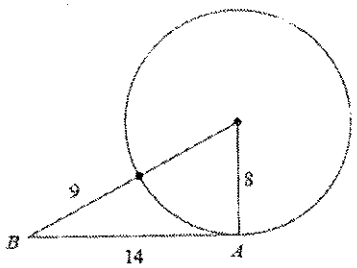


10)

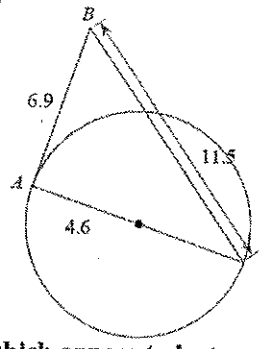


Determine if line AB is tangent to the circle.

11)

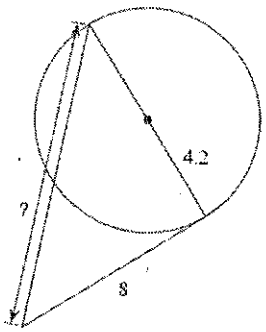


12)

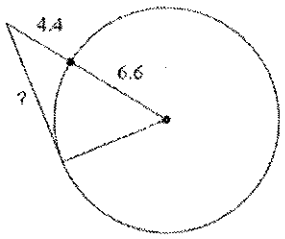


Find the segment length indicated. Assume that lines which appear to be tangent are tangent.

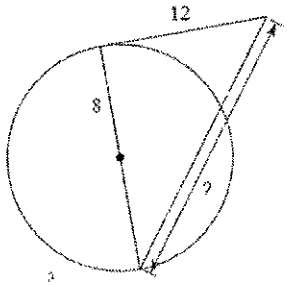
13)



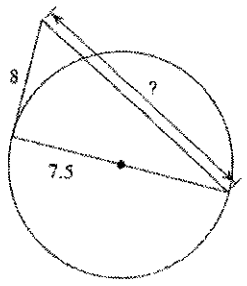
14)



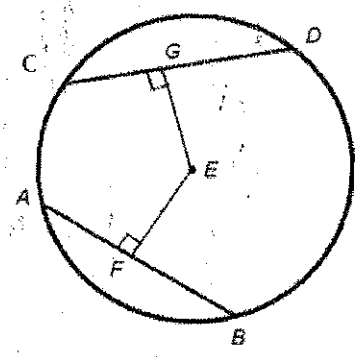
15)



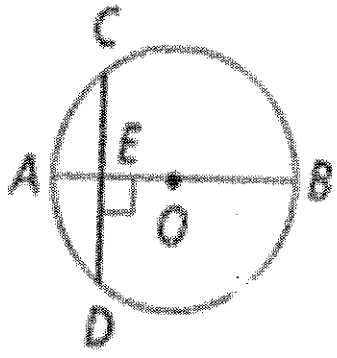
16)



17. If $EG \cong EF$, $CD = 3x + 10$, and $AF = 2x - 5$, what is the length of AB?



18. If $\widehat{CB} \cong \widehat{DB}$, $m\overline{DC} = 24$, and $m\overline{OE} = 9$, What is the $m\overline{OB}$?



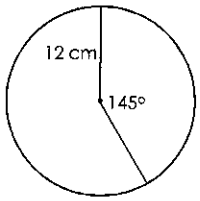
Circle with center E is shown. The measure of $\angle CED = 145°$ and the length of CE is 12 cm. What is the length of $\overset{\frown}{CD}$?

A. $\frac{29\pi}{72}$ cm

B. $\frac{29\pi}{3}$ cm

C. $\frac{29\pi}{6}$ cm

D. $\frac{29\pi}{2}$ cm



1

Volume of Prisms

V = Bh

B = area of BASE

(can be different depending on what shape of the base)

h = HEIGHT of the solid

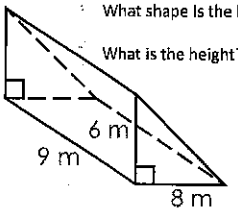
(distance from one base to the other)

2

EX 1: Find the volume. V = Bh

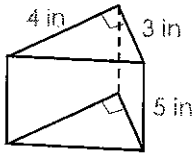
What shape is the base?

What is the height?



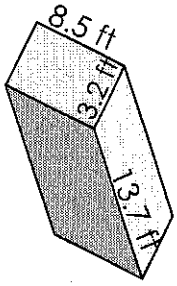
3

EX 2: Find the volume. V = Bh



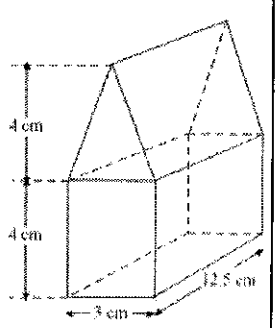
4

EX 3: Find the volume. V = Bh



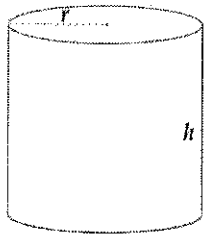
5

EX 4: Find the volume. V = Bh



6

Volume of Cylinders

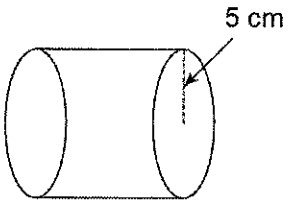


$V = \pi r^2 h$

7

EX 5: Volume of a Cylinder

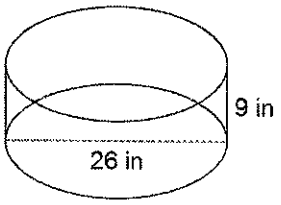
(leave in terms of pi) $V = \pi r^2 h$



8

EX6: Volume of a Cylinder

(round to the nearest tenths)



9

Geometry

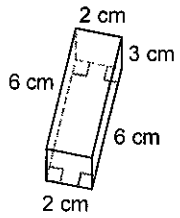
Name_____

Volume - Prisms and Cylinders

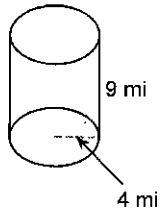
Date_____ Period____

Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.

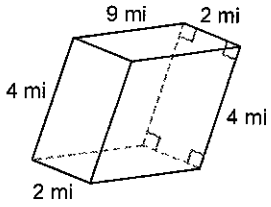
1)



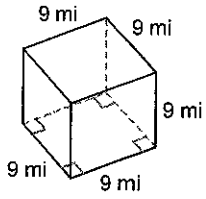
2)



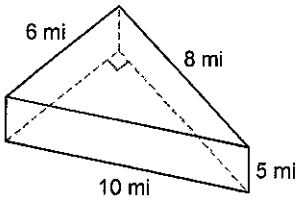
3)



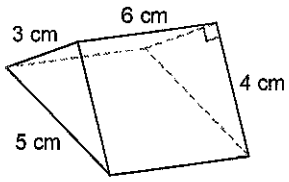
4)



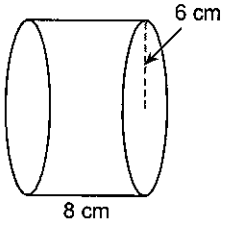
5)



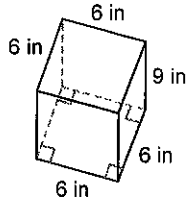
6)



7)



8)



24

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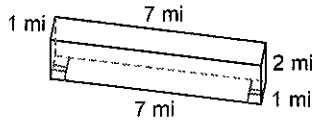

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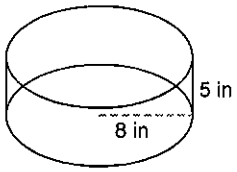

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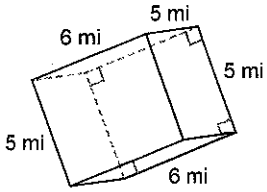
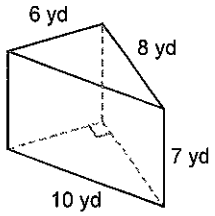


12)



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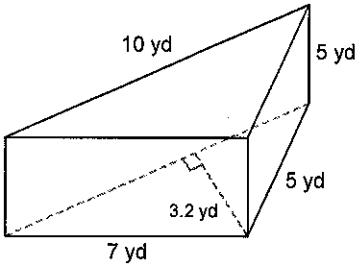

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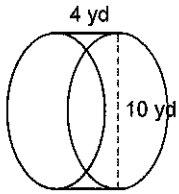

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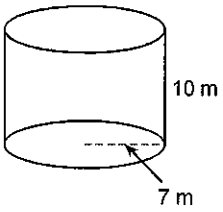
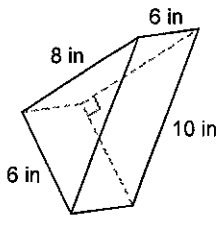


16)



Geometry

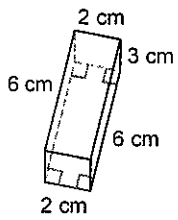
Name_____

Volume - Prisms and Cylinders

Date_____ Period____

Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.

1)



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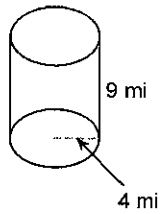
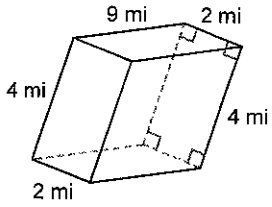


3)



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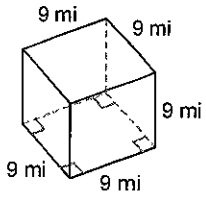

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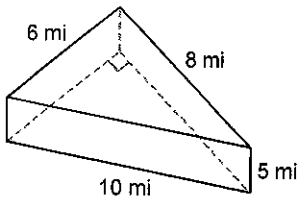

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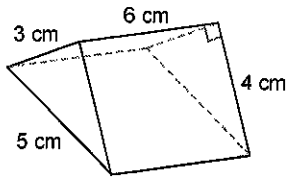

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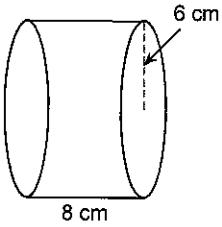

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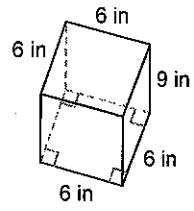

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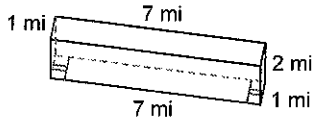

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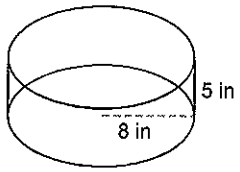

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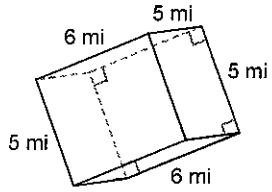
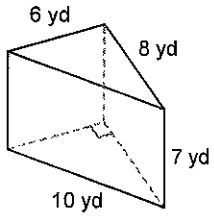


12)



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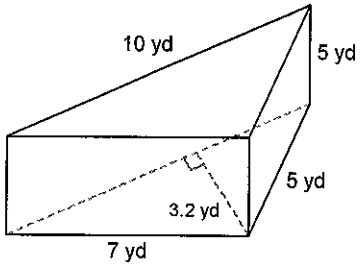

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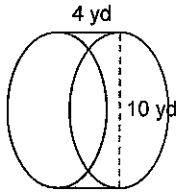

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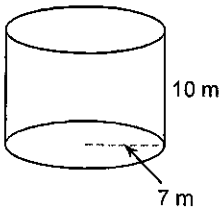
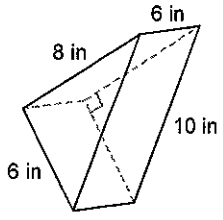


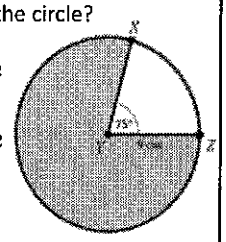
16)



Circle with center Y is shown. The measure of the $\angle XYZ = 75^o$ and the length of YD is 9 cm. What is the area of the shaded part of the circle?

A. $\frac{57\pi}{4}\ cm^2$ B. $\frac{135\pi}{8}\ cm^2$

C. $\frac{405\pi}{9}\ cm^2$ D. $\frac{513\pi}{8}\ cm^2$



1

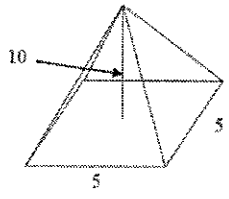
Volume of Pyramids

$$V = \_\_\_ Bh$$

B stands for the _____ of the _____.

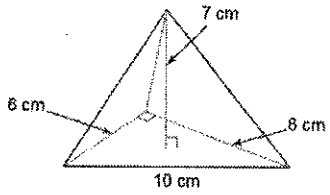
2

Find the volume and round to the nearest tenth. $V = \frac{1}{3}Bh$



3

Find the volume and round to the nearest tenth. $V = \frac{1}{3}Bh$



4

Volume of Cones

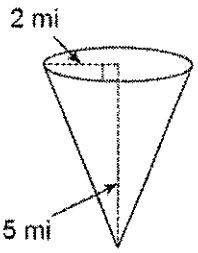
$$V = \frac{1}{3}Bh$$

B stands for the_____of the _____ and the base of a cone will ALWAYS BE A _____

h is the perpendicular distance from the _____ to the _____.

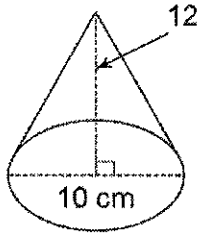
5

3. Find the volume and round to the nearest tenth. $V = \frac{1}{3}Bh$



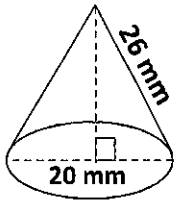
6

4. Find the volume and round to the nearest tenth. $V = \frac{1}{3}Bh$



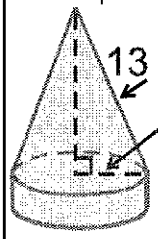
7

5. Find the volume and round to the nearest tenth. $V = \frac{1}{3}Bh$



8

6. Find the volume of the composite figure.

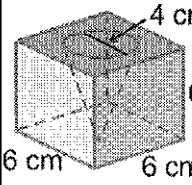


$V_{cylinder}$ =

V_{cone} =

9

7. Find the volume of the composite figure.



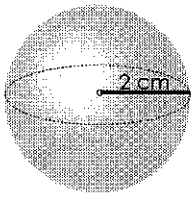
V_{cube} =

V_{cone} =

10

Volume of a Sphere $V = \frac{4}{3}\pi r^3$

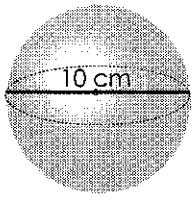
(round to the nearest hundredths)



11

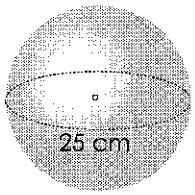
8.Volume of a Sphere $V = \frac{4}{3}\pi r^3$

(round to the nearest hundredths)



12

9. The circumference of a great circle of a sphere is 25 inches. Find the volume of the sphere. (Round to the nearest hundredths.)



13

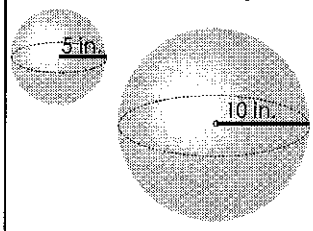
Ratio Relationships

a:b	Ratio of the **scale factor**
a:b	Ratio of the **corresponding sides**
a:b	Ratio of the **perimeters**
$a^2:b^2$	Ratio of the **area**
$a^3:b^3$	Ratio of the **volume**

14

Volume of a Sphere

A spherical balloon has an initial radius of 5 in. When more air is added, the radius becomes 10 in. How does volume change as the radius changes.



15

Volume of a Sphere

A sphere has an initial volume of 400 cm.^{3} The sphere is made bigger by making the radius 4 times larger. What is the new volume of the sphere?

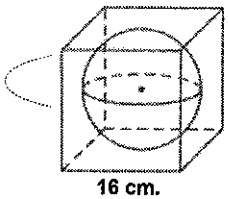
16

Volume of a Sphere

A sphere is inscribed in a cube-shaped box as pictured below. To the nearest centimeter, what is the volume of the empty space in the box?

V_{sphere} =

V_{cube} =



$V_{\text{empty space}}$ =

17

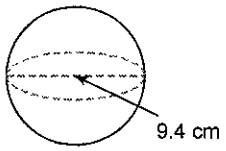
Geometry Name_____

Volume - Cones and Pyramids

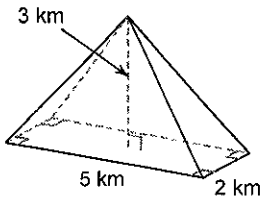
Date_____ Period____

Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.

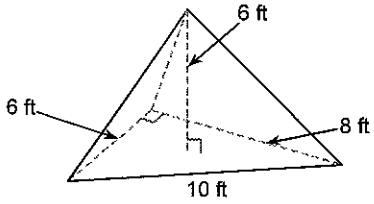
1)



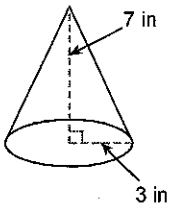
2)



3)



4)



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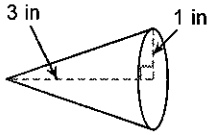
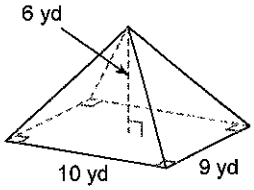
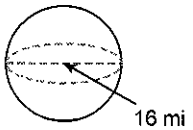


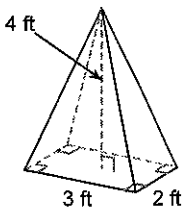
6)



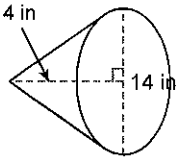
7)



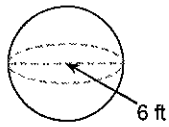
8)



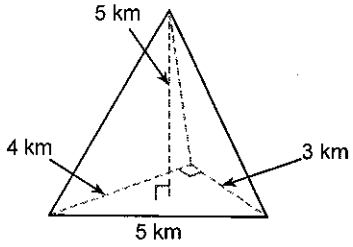
9)



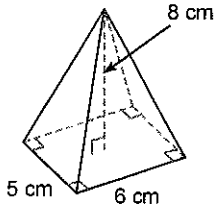
10)



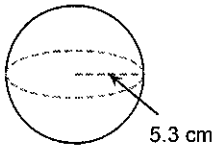
11)



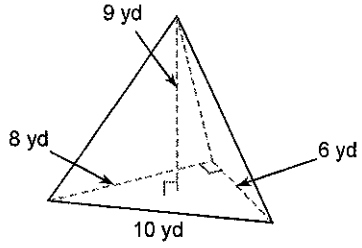
12)



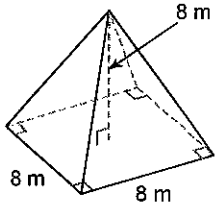
13)



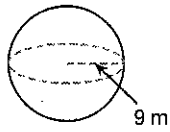
14)



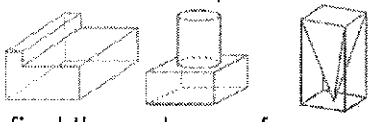
15)



16)



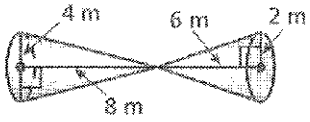
Volume of Composite Fiaures



To find the volume of a composite figure, find the volume of the simple figures that create it and _____ or _____ the individual volumes.

1

Find the volume of the composite figure.



2

Practice: Volume of Composite Figures

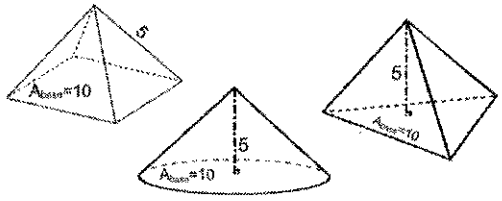
3

Cavalieri's Principle

If two shapes have the same _____ and matching cross sectional _____ everywhere along the height, then the shapes have the same _____.

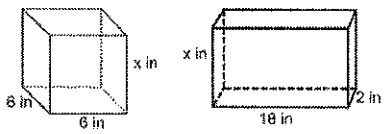
4

Based on Cavaleri's Principle, which figures have the same volume?



5

Based on Cavaleri's Principle, do the following figures have the same volume? Explain how you know.



6

Geometry

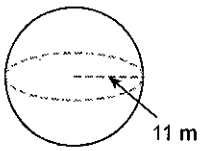
Name_____

Volume Quiz Review

Date_____ Period____

Find the volume of each figure. Round your answers to the nearest hundredth, if necessary.

1)



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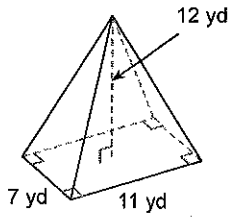

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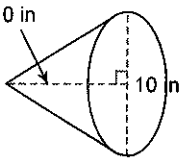

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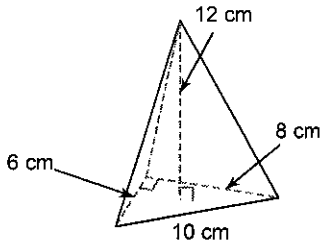

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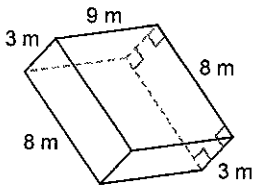

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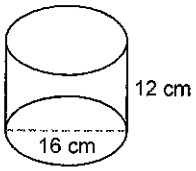

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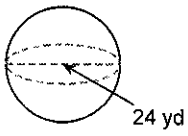

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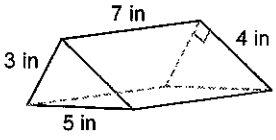

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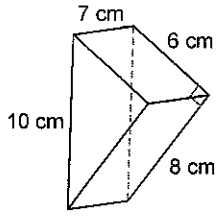

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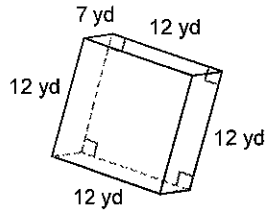

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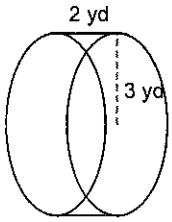

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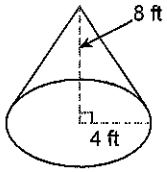


13) A cone with diameter 4 ft and a height of 10 ft.

14) A rectangluar pyramid of height 8 m measuring 4 m and 8 m along the base.

15) A prism 1 m tall with a right triangle for a base with side lengths 3 m, 4 m, and 5 m.

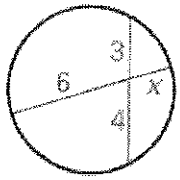
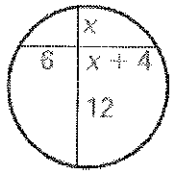
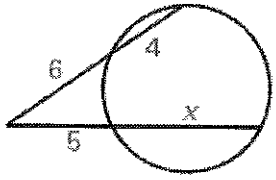
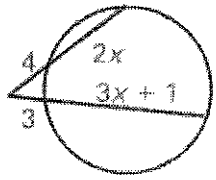
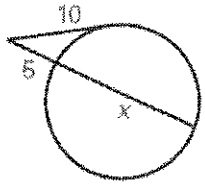
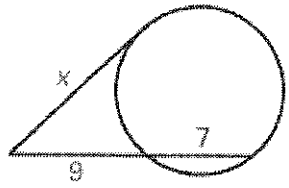
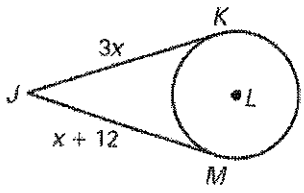
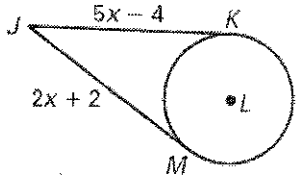
16) A rectangular prism measuring 5 cm and 6 cm along the base and 12 cm tall.

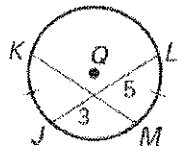
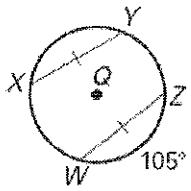
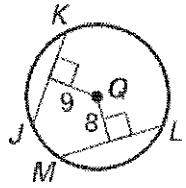
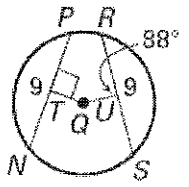
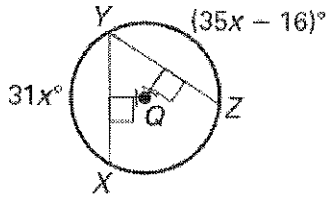
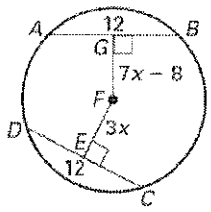
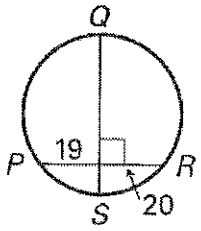
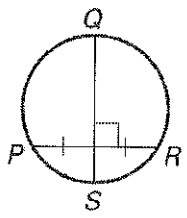
17) A cylinder with a diameter of 22 ft and a height of 9 ft.

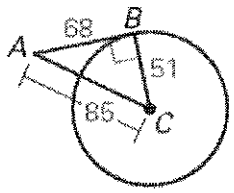
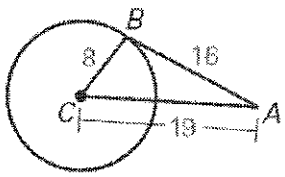
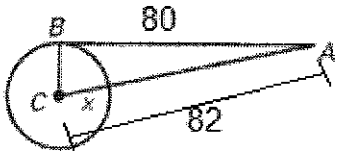
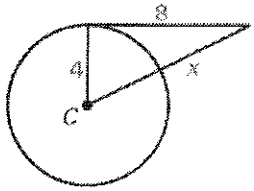
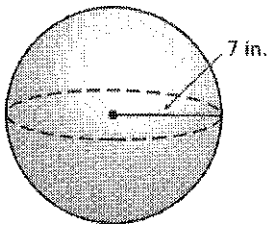
18) A sphere with a radius of 6 mi.

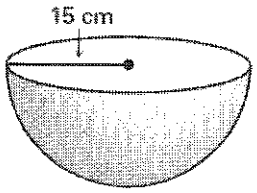
Name: _____ Date: _____

Use the following to review for you test. **Work the Practice Problems on a separate sheet of paper.**

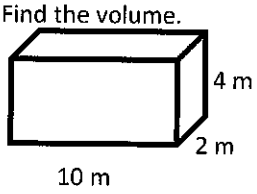
What you need to know & be able to do	Things to remember	Examples	
Find the measure of parts of a chord in a circle	part • part = part • part	**1. Find the value of x** 	**2. Find the value of x** 
Find the measure of segments when two secants intersect a circle.	outside • whole = outside • whole	**3. Find the value of x** 	**4. Find the value of x.** 
Find the measure of segments when a secant and a tangent intersect a circle.	outside • whole = outside • whole	**5. Find the value of x.** 	**6. Find the value of x.** 
Use the properties of congruent tangents	Tangents coming from the same external point are congruent	**7. Find JK.** 	**8. Find JM.** 

Use the properties of congruent chords to find the measures of chords and arcs.	If two chords are congruent then their arcs are congruent	**9. Find the value of KM.** 	**10. Find the $m\overset{\frown}{YZ}$ if $m\overset{\frown}{XW} = 95°$.** 
Determine if two chords are congruent	Two chords are congruent if they are equidistant from the center of the circle	**11. Are $\overline{JK}$ and $\overline{ML}$ congruent?** 	**12. Are $\overline{TQ}$ and $\overline{UQ}$ congruent?** 
Use the properties of congruent chords to find the measure of arcs and segments	Two chords are congruent if and only if they are equidistant from the center of the circle.	**13. Find the measure of YX.** 	**14. Find the measure of GF.** 
Determine if a chord is a diameter.	To be a diameter the chord must be a perpendicular bisector of another chord.	**15. Is $\overline{QS}$ a diameter? Why or why not?** 	**16. Is $\overline{QS}$ a diameter? Why or why not?** 

Use the properties of diameters and perpendicular chords to find the radius of a circle.	Set up the problem so that you can use Pythagorean theorem.	**17. A chord in a circle is 18 cm long and is 5 cm from the center of the circle. How long is the radius of the circle?**	**18. The radius of a circle is 15 inches. A chord is drawn 4 inches from the center of the circle. How long is the chord?**
Use properties of tangents to determine if the line is a tangent	You must satisfy the Pythagorean Theorem.	19. Is $\overline{AB}$ **a tangent? Why or why not?** 	20. Is $\overline{AB}$ **a tangent? Why or why not?** 
Use properties of tangents to find missing measures.	Pythagorean Theorem	21. Find the measure of x. 	22. Find the value of x. 
Find the surface area of spheres.	$S = 4\pi r^2$	23. Find the surface area of the sphere. 	24. What is the diameter of a sphere with a surface area of 44π cm^2?

<table>
<tr>
<td>Find the volume of spheres.</td>
<td>$V = \frac{4}{3}\pi r^3$</td>
<td>25. A beach ball has a diameter of 8 inches. Find its volume.</td>
<td>26. Find the volume of the hemisphere.
 
</td>
</tr>
<tr>
<td rowspan="2">Find the volume of prisms and cylinders.</td>
<td rowspan="2">V=Bh

(where B is the area of the base)

$A_{Rectangle}$= bh
A_{Circle}= πr^2
$A_{Triangle}$= ½ bh
$A_{Trapezoid}$ = ½$(b_1+b_2)h$</td>
<td>27. Find the volume.
 
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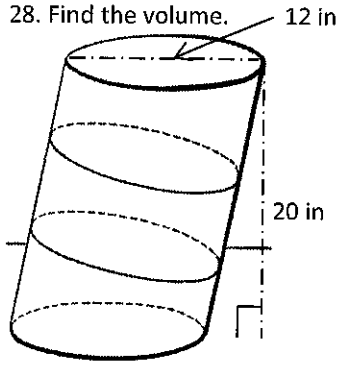
<td>28. Find the volume.
 
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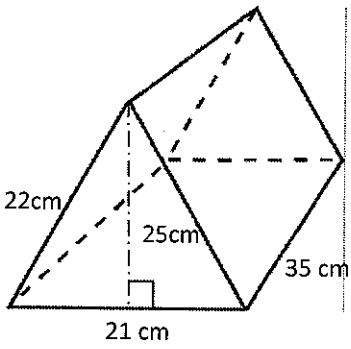
<tr>
<td>29. Find the volume.
 
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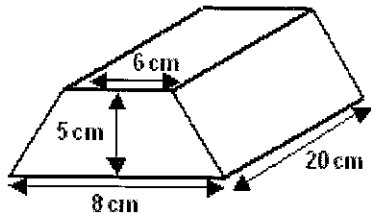
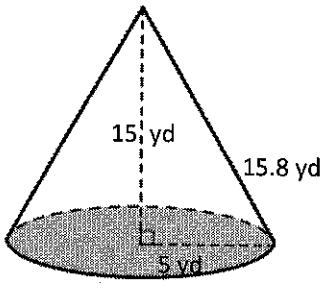
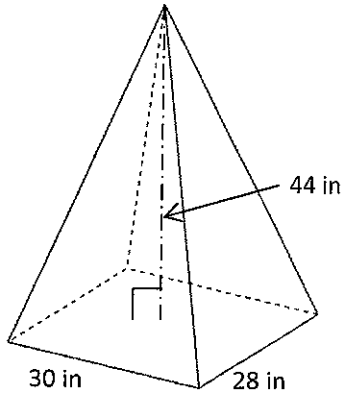
<td>30. Find the volume.
 
</td>
</tr>
<tr>
<td>Find the volume of pyramids and cones.</td>
<td>V = 1/3 Bh</td>
<td>31. Find the volume.
 
</td>
<td>32. Find the volume.
 
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