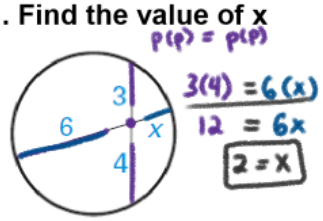
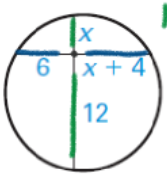
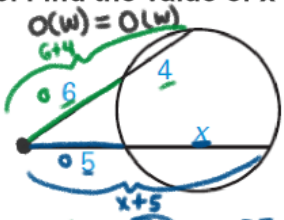
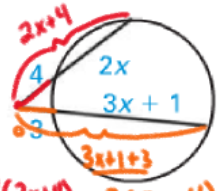
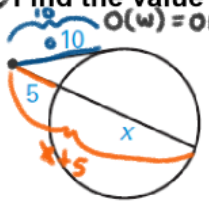
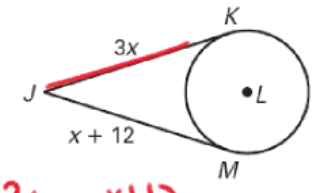
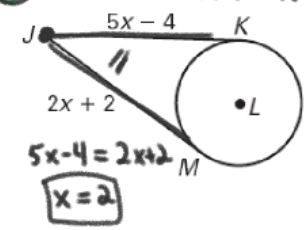
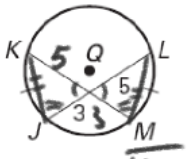
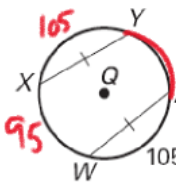
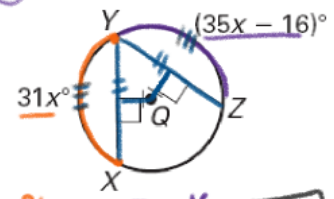
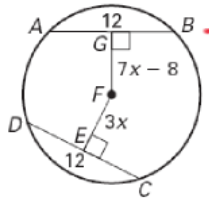
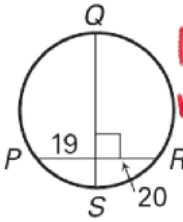
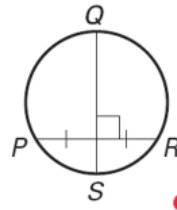
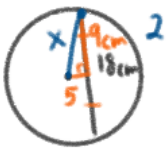
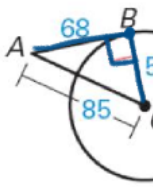
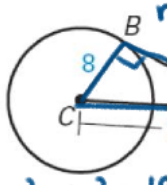
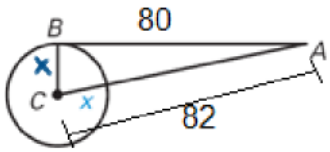
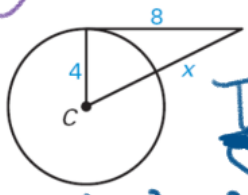
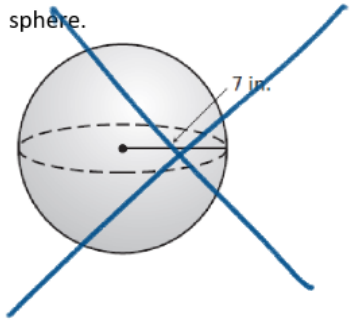
Name: _____ Date: _____

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**  $P(P) = P(P)$ $3(4) = 6(x)$ $12 = 6x$ $2 = x$	**2. Find the value of x**  $12(x) = 6(x+4)$ $12x = 6x+24$ $6x = 24$ $x = 4$
Find the measure of segments when two secants intersect a circle.	outside • whole = outside • whole	**3. Find the value of x**  $O(W) = O(W)$ $6+4$ $6(10) = 5(x+5)$ $60 = 5x+25$ $35 = 5x$ $7 = x$	**4. Find the value of x.**  $4(2x+4) = 3(3x+4)$ $8x+16 = 9x+12$ $4 = x$
Find the measure of segments when a secant and a tangent intersect a circle.	outside • whole = outside • whole	**5. Find the value of x.**  $O(W) = O(W)$ $5(x+5) = 10(10)$ $5x+25 = 100$ $x = 15$	**6. Find the value of x.**  $O(W) = O(W)$ $x(x) = 9(16)$ $x^2 = 144$ $x = 12$
Use the properties of congruent tangents	Tangents coming from the same external point are congruent	**7. Find JK.**  $3x = x+12$ $x = 6$	**8. Find JM.**  $5x-4 = 2x+2$ $x = 2$

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.**  $\overline{KM} = \overline{LJ}$ $m\overline{KM} = 5+3 = 8$	**10. Find the $m\overset{\frown}{YZ}$ if $m\overset{\frown}{XW} = 95°$.**  $= 95+105+95$ $= 295$ $360 - 295$ $65°$
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?**  No, because they are not the same distance from center	**12. Are $\overline{TQ}$ and $\overline{UQ}$ congruent?**  No, because $\overline{TU}$ is not $\perp$ to the chord $\overline{RS}$
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.**  $31x = 35x - 16$ $0 = 4x - 16$ $16 = 4x$ $x = 4$	**14. Find the measure of GF.**  $7x - 8 = 3x$ $-8 = -4x$ $2 = x$
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?**  No, it is not a perpendicular bisector of $\overline{PR}$	**16. Is $\overline{QS}$ a diameter? Why or why not?**  Yes, It is the $\perp$ bisector of $\overline{PR}$

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?**  $5^2+9^2=x^2$ $25+81=x^2$ $106=x^2$ $x=10.296\text{cm}$	**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?**  $4^2+x^2=15^2$ $16+x^2=225$ $x^2=209$ $x=\sqrt{209}$ $x=14.46\text{in}$ Chord $=2(14.46)$ $=28.9\text{in}.$
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?**  Yes, because it is $\perp$ to the radius.	20. Is $\overline{AB}$ a tangent? Why or why not? NO $\overline{AB}$ is not tangent b/c it is not $\perp$ to the radius.  $8^2+16^2=19^2$ $64+256=361$ $320\neq 361$
Use properties of tangents to find missing measures.	Pythagorean Theorem	21. Find the measure of x.  $x^2+80^2=82^2$ $x^2+6400=6724$ $x^2=324$ $x=18$	22. Find the value of x.  $x=8.94$ $8^2+4^2=x^2$ $64+16=x^2$ $80=x^2$
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?

Find the volume of spheres.	$V = \frac{4}{3}\pi r^3$	25. A beach ball has a diameter of 8 inches. Find its volume. $V = \frac{4}{3}\pi r^3$ r = 4 $V = \frac{4}{3}\pi(4)^3$ $V = \frac{256\pi}{3}$ $\approx 268.08\ in^3$	26. Find the volume of the hemisphere. 15 cm $V = \frac{\frac{4}{3}\pi(15)^3}{2}$ $= 2250\pi\ cm^3$ $\approx 7068.58\ cm^3$
Find the volume of prisms and cylinders.	V=Bh (where B is the area of the base) $A_{Rectangle}$= bh A_{Circle}= πr^2 $A_{Triangle}$= ½ bh $A_{Trapezoid}$ = ½$(b_1+b_2)h$	27. Find the volume. 4 m = h 2 m = w l = 10 m V = B·h B = l·w V = l·w·h = 10(2)(4) = 80 m^3 29. Find the volume. V = B·h $B = \frac{1}{2}bh = \frac{1}{2}(21)(25) = 262.5$ h = 35 25cm 35 cm h 21 cm $V = (262.5)(35) = 9187.5\ cm^3$	28. Find the volume. 12 in r = 6 $V = \pi r^2 h$ $V = \pi(6^2)(20)$ $V = 720\pi\ in^3$ 20 in h $\approx 2261.95\ in^3$ 30. Find the volume. 6 cm 5 cm 20 cm 8 cm $B = 5\left(\frac{6+8}{2}\right) = 35\ cm^2$ $V = 35(20) = 700\ cm^3$
Find the volume of pyramids and cones.	V = 1/3 Bh	31. Find the volume. Cone h = 15 yd 15.8 yd r = 5 yd $V = \frac{1}{3}\pi r^2 h$ $V = \frac{1}{3}\pi(5)^2(15) = 125\pi\ yd^3$ $\approx 392.70\ yd^3$	32. Find the volume. B = L·W = 30(28) = 840 in^2 44 in 30 in 28 in $V = \frac{1}{3}Bh = \frac{1}{3}(840)44$ $= 12{,}320\ in^3$