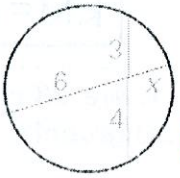
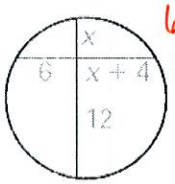
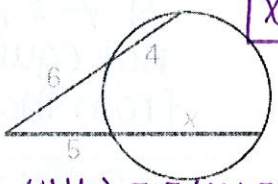
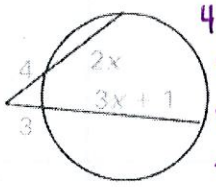
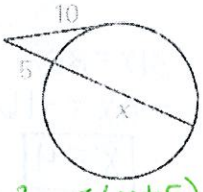
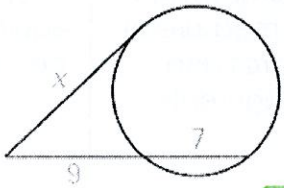
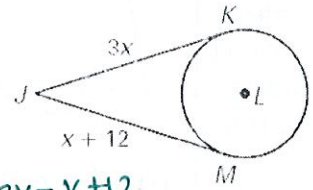
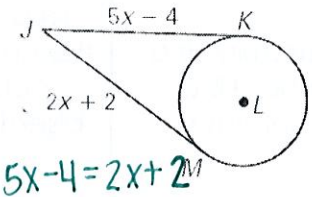
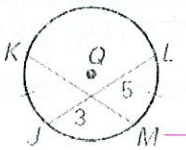
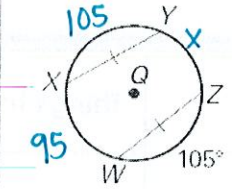
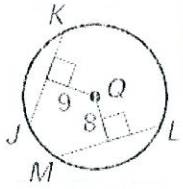
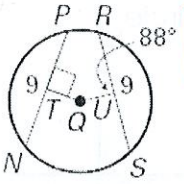
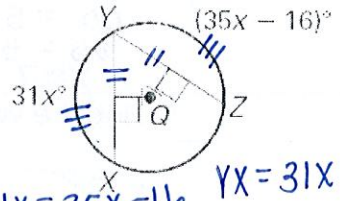
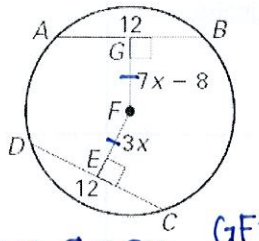
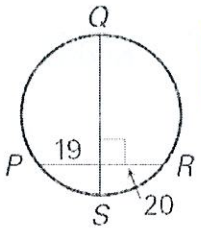
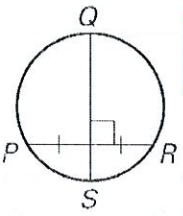
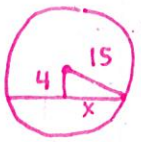
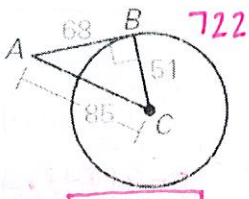
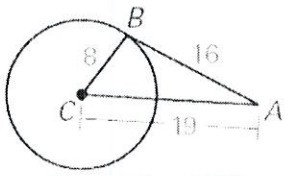
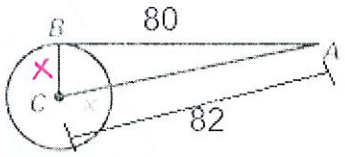
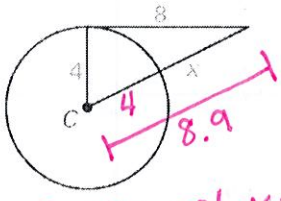
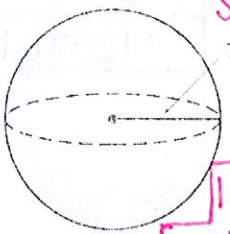
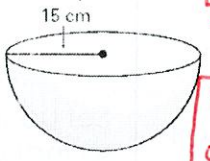
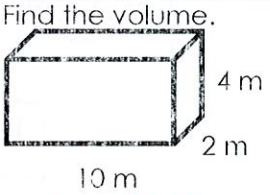
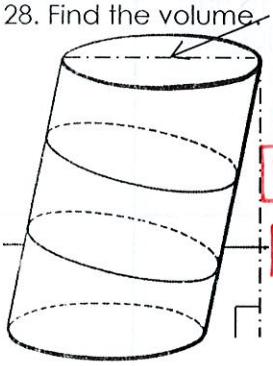
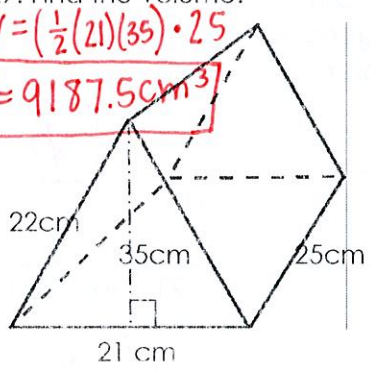
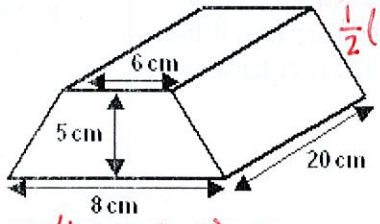
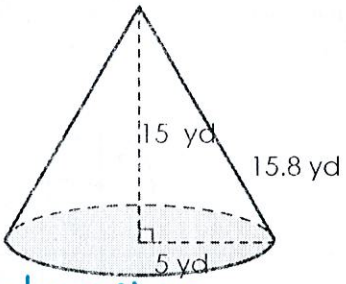
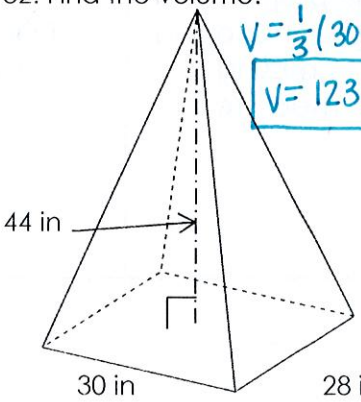
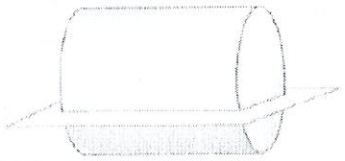
Name _____ Date _____

UNIT 5 TEST REVIEW

Topic	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**  $6 \cdot x = 3 \cdot 4$ $6x = 12$ $x = 2$	**2. Find the value of x**  $6 \cdot (x+4) = 12 \cdot x$ $6x + 24 = 12x$ $24 = 6x$ $4 = x$ $x = 4$
Find the measure of segments when two secants intersect a circle.	outside • whole = outside • whole	**3. Find the value of x** $x = 7$  $6 \cdot (4+6) = 5(x+5)$ $6(10) = 5x + 25$ $60 = 5x + 25$ $35 = 5x$ $x = 7$	**4. Find the value of x.**  $4(2x+4) = 3(3x+1+3)$ $8x + 16 = 3(3x+4$ $8x + 16 = 9x + 12$ $-x = -4$ $x = 4$
Find the measure of segments when a secant and a tangent intersect a circle.	$\tan^2$ = outside • whole	**5. Find the value of x.**  $10^2 = 5(x+5)$ $100 = 5x + 25$ $75 = 5x$ $x = 15$ $x = 15$	**6. Find the value of x.**  $x^2 = 7(7+9)$ $x^2 = 7(16)$ $x^2 = 144$ $x = 12$
Use the properties of congruent tangents	Tangents coming from the same external point are congruent	**7. Find JK.**  $3x = x + 12$ $2x = 12$ $x = 6$	**8. Find JM.**  $5x - 4 = 2x + 2$ $3x = 6$ $x = 2$

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.**  $KM = 3 + 5 = 8$ **KM = 8**	**10. Find the $m\overset{\frown}{YZ}$ if $m\overset{\frown}{XW} = 95°$.** $x + 105 + 95 + 105 = 360$  $x + 305 = 360$ **$x = 55°$**
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** $9 \neq 8$, they are not equidistant from the center	**12. Are $\overline{TQ}$ and $\overline{UQ}$ congruent?**  **NO** $90° \neq 88°$, the chords are $\cong$ but measured at diff. $\angle$s
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.**  $31x = 35x - 16$ $-4x = -16$ **$x = 4$** $YX = 31x$ $YX = 31(4)$ **$YX = 124°$**	**14. Find the measure of GF.**  $7x - 8 = 3x$ $-8 = -4x$ **$x = 2$** $GF = 7x - 8$ $= 7(2) - 8$ $= 14 - 8$ **$GF = 6$**
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** $19 \neq 20$, the chord is not bisected	**16. Is $\overline{QS}$ a diameter? Why or why not?**  **YES** QS is perpendicular to the chord and it bisects it

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?**  $5^2+9^2=r^2$ $106=r^2$ $r=\sqrt{106}$ $r=10.3$	**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?**  $4^2+x^2=15^2$ $x^2=209$ $x=14.5$ $14.5\cdot 2=29$ The chord is 29 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? $51^2+68^2=85^2$ $7225=7225$ ✓  Yes	20. Is $\overline{AB}$ a tangent? Why or why not?  $8^2+16^2=19^2$ $320\neq 361$ NO
Use properties of tangents to find missing measures.	Pythagorean Theorem	21. Find the measure of x. $x^2+80^2=82^2$ $x^2=324$ $x=18$  	22. Find the value of x.  $4^2+8^2=c^2$ $80=c^2$ $c\approx 8.9$ $x=8.9-4$ $x=4.9$
Find the surface area of spheres.	$S = 4\pi r^2$	23. Find the surface area of the sphere. $SA=4\pi(7)^2$ $=4\pi(49)$ $=196\pi$  196π in² or 615.8 in²	24. What is the diameter of a sphere with a surface area of $44\pi\ cm^2$? $\frac{4\pi r^2}{4\pi}=\frac{44\pi}{4\pi}$ $\sqrt{r^2}=\sqrt{11}$ $r=3.3$ $d=3.3\cdot 2$ $d=6.6$ 6.6 cm

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. $r = 4$ $V = \frac{4}{3}\pi(4)^3$ $V = \frac{256}{3}\pi \text{ in}^3$ or 268.1 in^3	26. Find the volume of the hemisphere.  $\frac{4/3\pi(15)^3}{2}$ $V = 2250\pi \text{ cm}^3$ or 7068.6 cm^3
		27. Find the volume.  $V = (2 \cdot 10) \cdot 4$ $V = 80 \text{m}^3$	28. Find the volume.  $r = 6$ $V = (\pi 6^2) \cdot 20$ $V = 720\pi \text{ in}^3$ or 2261.9 in^3
		29. Find the volume. $V = (\frac{1}{2}(21)(35)) \cdot 25$ $V = 9187.5 \text{cm}^3$ 	30. Find the volume. A trapezoid = $\frac{1}{2}(b_1+b_2)h$  $V = (\frac{1}{2}(8+6) \cdot 5) \cdot 20$ $V = 700 \text{ cm}^3$
Find the volume of pyramids and cones.	V = 1/3 Bh	31. Find the volume.  $V = \frac{1}{3}(\pi 5^2) \cdot 15$ $V = 125\pi \text{yd}^3$ or 392.7yd^3	32. Find the volume.  $V = \frac{1}{3}(30 \cdot 28) \cdot 44$ $V = 12320 \text{in}^3$
Find the shape of the cross-section of a 3D figure.	When cutting a 3D figure by a plane, the result is a 2D figure.	33. Name the cross-section.  Rectangle	34. Name the cross-section.  Triangle