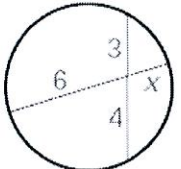
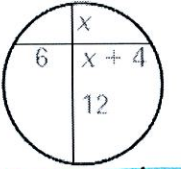
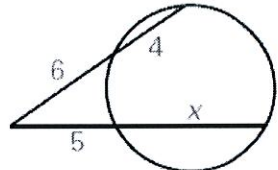
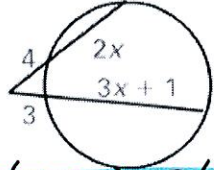
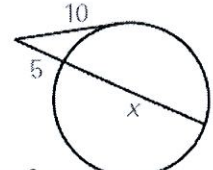
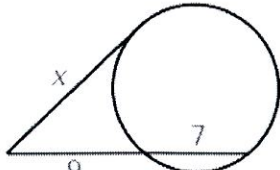
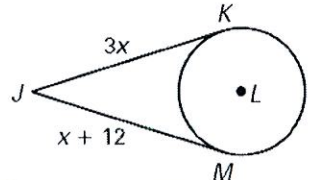
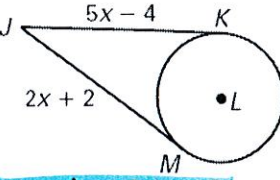
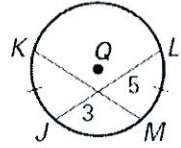
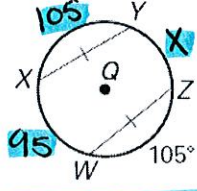
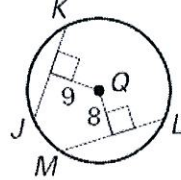
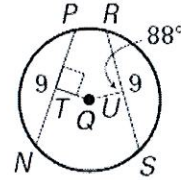
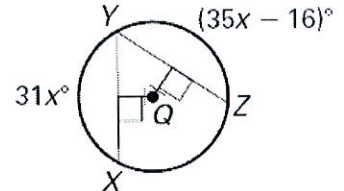
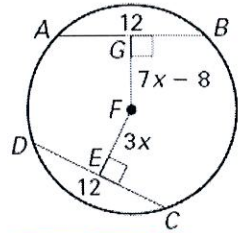
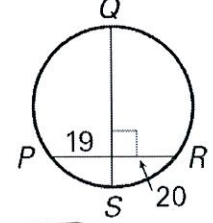
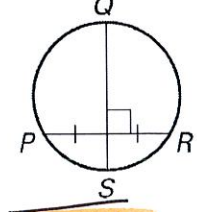
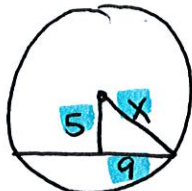
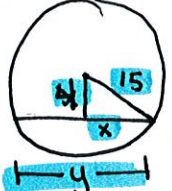
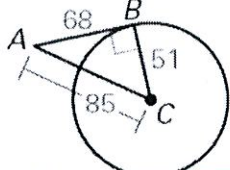
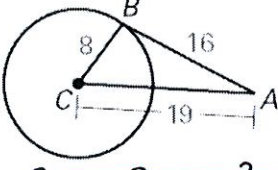
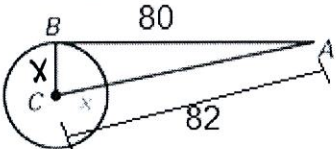
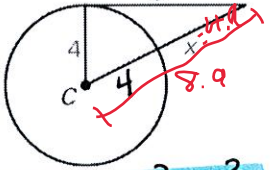
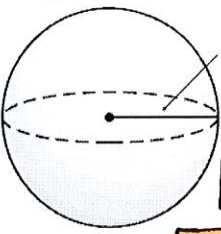
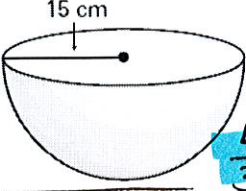
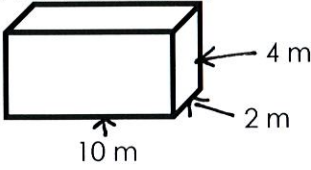
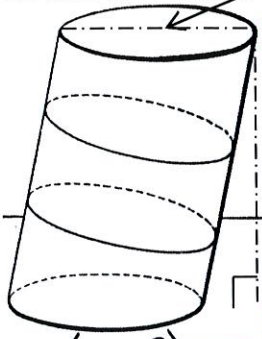
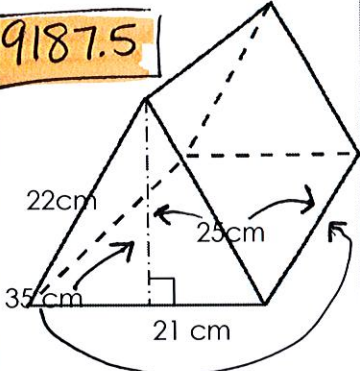
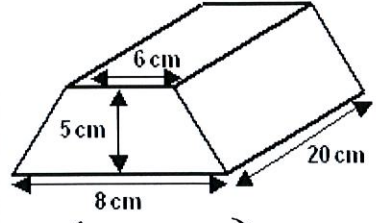
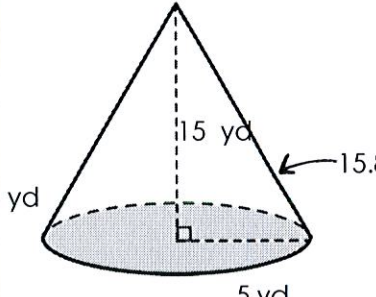
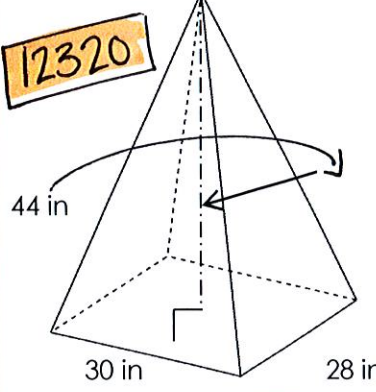


Name: _____ Date: _____

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

<p>Use the properties of congruent chords to find the measures of chords and arcs.</p>	<p>If two chords are congruent then their arcs are congruent</p>	<p>9. Find the value of KM.</p>  <p>$KM = 3 + 5 = 8$</p>	<p>10. Find the $m\widehat{YZ}$ if $m\widehat{XW} = 95^\circ$.</p>  <p>$360 = 105 + X + 105 + 95$ $X = 55$</p>
<p>Determine if two chords are congruent</p>	<p>Two chords are congruent if they are equidistant from the center of the circle</p>	<p>11. Are \overline{JK} and \overline{ML} congruent?</p>  <p>no! $9 \neq 8$ not equidistant from center</p>	<p>12. Are \overline{TQ} and \overline{UQ} congruent?</p>  <p>no! $90 \neq 88^\circ$ Chords are \cong but measured at diff. angles.</p>
<p>Use the properties of congruent chords to find the measure of arcs and segments</p>	<p>Two chords are congruent if and only if they are equidistant from the center of the circle.</p>	<p>13. Find the measure of YX.</p>  <p>$31x = 35x - 16$ $-4x = -16$ $x = 4$</p>	<p>14. Find the measure of GF.</p>  <p>$7x - 8 = 3x$ $-8 = -4x$ $x = 2$</p>
<p>Determine if a chord is a diameter.</p>	<p>To be a diameter the chord must be a perpendicular bisector of another chord.</p>	<p>15. Is \overline{QS} a diameter? Why or why not?</p>  <p>no! $19 \neq 20$ the chord is not bisected</p>	<p>16. Is \overline{QS} a diameter? Why or why not?</p>  <p>yes! perpendicular & bisector</p>

<p>Use the properties of diameters and perpendicular chords to find the radius of a circle.</p>	<p>Set up the problem so that you can use Pythagorean theorem.</p>	<p>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?</p>  <p>$x = 10.3$</p> <p>10.3</p> <p>$5^2 + 9^2 = x^2$ $106 = x^2$</p>	<p>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?</p>  <p>$x = 14.5$ $y = 29$</p> <p>$x^2 + 4^2 = 15^2$ $x^2 = 209$</p>
<p>Use properties of tangents to determine if the line is a tangent</p>	<p>You must satisfy the Pythagorean Theorem.</p>	<p>19. Is \overline{AB} a tangent? Why or why not?</p>  <p>$68^2 + 51^2 = 85^2$ $7225 = 7225$ yes!</p>	<p>20. Is \overline{AB} a tangent? Why or why not?</p>  <p>$8^2 + 16^2 = 19^2$ $320 \neq 361$ no!</p>
<p>Use properties of tangents to find missing measures.</p>	<p>Pythagorean Theorem</p>	<p>21. Find the measure of x.</p> <p>$x^2 + 80^2 = 82^2$ $x^2 = 324$ $x = 18$</p> 	<p>22. Find the value of x.</p>  <p>$(x+4)^2 = 4^2 + 8^2$ $x^2 + 8x + 16 = 80$ yuck!</p>
<p>Find the surface area of spheres.</p>	<p>$S = 4\pi r^2$</p>	<p>23. Find the surface area of the sphere.</p>  <p>$4\pi(7)^2$ 196π 615.8</p>	<p>24. What is the diameter of a sphere with a surface area of $44\pi \text{ cm}^2$?</p> <p>$44\pi = 4\pi r^2$ $11 = r^2$ $r = 3.3$ $d = 2(3.3) = 6.6$</p>

<p>Find the volume of spheres.</p>	$V = \frac{4}{3}\pi r^3$	<p>25. A beach ball has a diameter of 8 inches. Find its volume.</p> <p>$r = 4$</p> $V = \frac{4}{3}\pi(4)^3$ $V = 36\pi = 113.1$	<p>26. Find the volume of the hemisphere.</p>  <p>15 cm</p> $V = \frac{4}{3}\pi(15)^3$ 2250π 7068.6
<p>Find the volume of prisms and cylinders.</p>	<p>$V = Bh$</p> <p>(where B is the area of the base)</p> <p>$A_{\text{Rectangle}} = bh$ $A_{\text{Circle}} = \pi r^2$ $A_{\text{Triangle}} = \frac{1}{2}bh$ $A_{\text{Trapezoid}} = \frac{1}{2}(b_1 + b_2)h$</p>	<p>27. Find the volume.</p>  <p>4 m 2 m 10 m</p> $V = (2 \cdot 10) \cdot 4$ $V = 80$	<p>28. Find the volume.</p>  <p>12 in r = 6 20 in</p> $V = (\pi 6^2) \cdot 20$ 720π 2261.9
<p>Find the volume of pyramids and cones.</p>	<p>$V = \frac{1}{3}Bh$</p>	<p>29. Find the volume.</p>  <p>22 cm 25 cm 35 cm 21 cm</p> $V = \frac{1}{2}(25)(21) \cdot 35$ 9187.5	<p>30. Find the volume.</p>  <p>6 cm 5 cm 8 cm 20 cm</p> $V = \left(\frac{1}{2}(8+6) \cdot 5\right) \cdot 20$ 700
<p>Find the volume of pyramids and cones.</p>	<p>$V = \frac{1}{3}Bh$</p>	<p>31. Find the volume.</p>  <p>15 yd yd 15.8 5 yd</p> $V = \frac{1}{3}(\pi 5^2) \cdot 15$ 125π 392.7	<p>32. Find the volume.</p>  <p>44 in 30 in 28 in</p> $V = \frac{1}{3}(30 \cdot 28) \cdot 44$ 12320