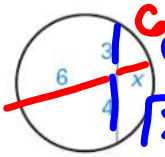
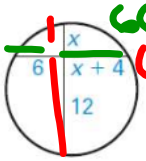
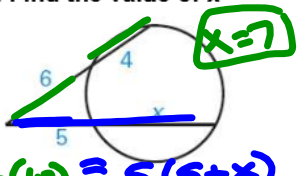
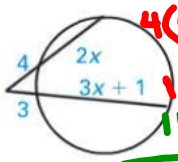
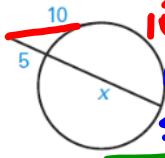
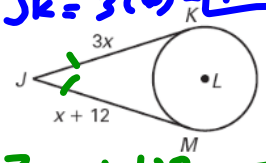
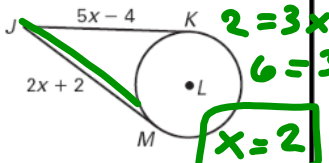
I will be assigning you a number to do at the board. You may sit when you show me the correct answer at which point I will assign you a new number to repeat the process.

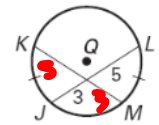
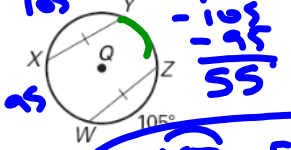
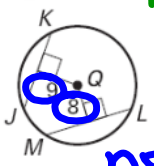
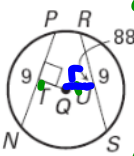
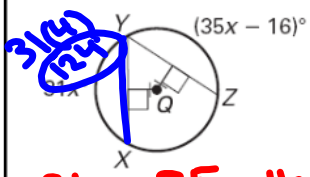
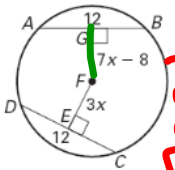
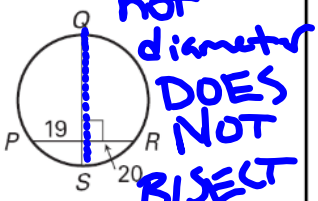
Geometry **4 – Circle Segments & Volume** Review

Name: _____ Date: _____

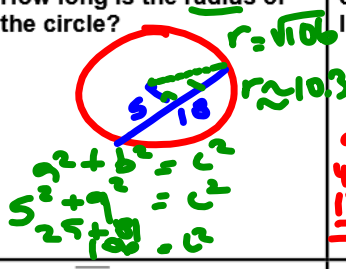
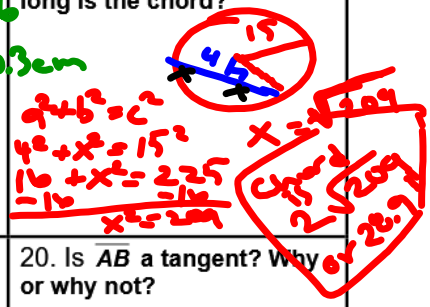
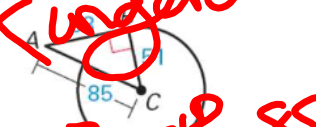
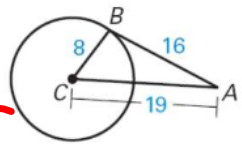
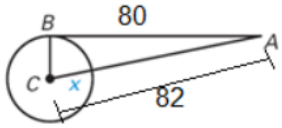
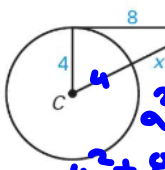
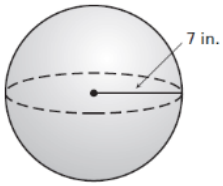
Use the following to review for you test. **Work the Practice Problems on a separate sheet of paper.**

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**  $6x = 3(4)$ $\frac{6x}{6} = \frac{12}{6}$ $x = 2$	**2. Find the value of x**  $6(x+4) = 12x$ $6x + 24 = 12x$ $6x = 24$ $x = 4$
Find the measure of segments when two secants intersect a circle.	outside • whole = outside • whole	**3. Find the value of x**  $x = 7$ $6(10) = 5(5+x)$ $60 = 25 + 5x$ $5x = 35$	**4. Find the value of x.**  $4(4+2x) = 3(3x+4)$ $16 + 8x = 9x + 12$ $16 = x + 12$ $x = 4$
Find the measure of segments when a secant and a tangent intersect a circle.	outside • whole = outside • whole	**5. Find the value of x.**  $10^2 = 5(5+x)$ $100 = 25 + 5x$ $5x = 75$ $x = 15$	**6. Find the value of x.**  $x^2 = 9(16)$ $x^2 = 144$ $x = 12$
Use the properties of congruent tangents	$m\overline{JK} = JK$ Tangents coming from the same external point are congruent	**7. Find JK.**  $JK = 3(6) = 18$ $3x = x + 12$ $2x = 12$ $x = 6$	**8. Find JM.**  $2x + 2 = 5x - 4$ $2 = 3x - 4$ $6 = 3x$ $x = 2$ $JM = 5(2) - 4 = 6$

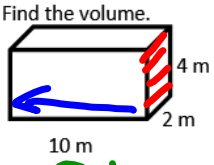
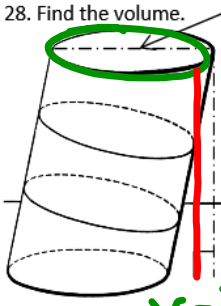
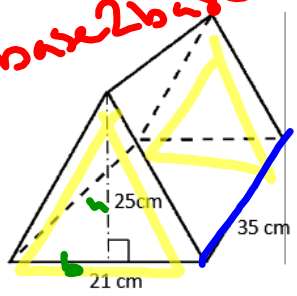
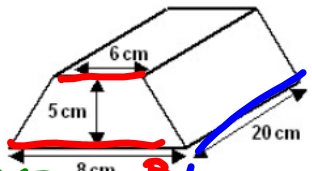
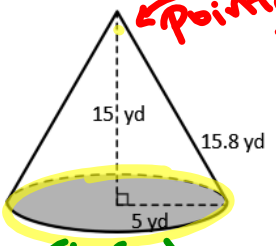
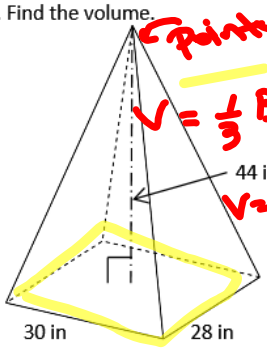
Geometry **4 – Circle Segments & Volume** Review

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 = 5 + 3 KM = 8	**10. Find the $m\overset{\frown}{YZ}$ if $m\overset{\frown}{XW} = 95°$.**  180 − 95 = 85 360 − 105 − 105 − 95 = 55 m YZ = 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.  not equidistant not congruent.	**12. Are $\overline{TQ}$ and $\overline{UQ}$ congruent?**  Same distance because 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.**  31x = 35x − 16 0 = 4x − 16 16 = 4x x = 4	**14. Find the measure of GF.**  7x − 8 = 3x 4x − 8 = 0 4x = 8 x = 2 7(2) − 8 = 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?** not diameter  DOES NOT BISECT	**16. Is $\overline{QS}$ a diameter? Why or why not?**  Yeah, it's perpendicular and bisects the chord.

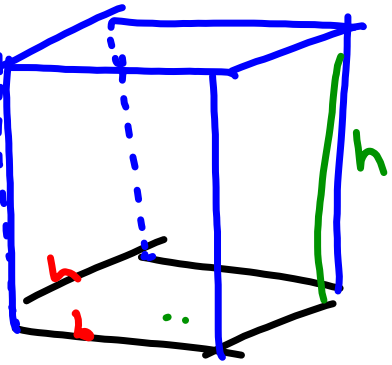
Geometry **4 – Circle Segments & Volume** Review

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?

Geometry **4 – Circle Segments & Volume** Review

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.	26. Find the volume of the hemisphere. 
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. 	28. Find the volume. 
		29. Find the volume. 	30. Find the volume. 
Find the volume of pyramids and cones.	V = 1/3 Bh	31. Find the volume. 	32. Find the volume. 

Base 2 Base



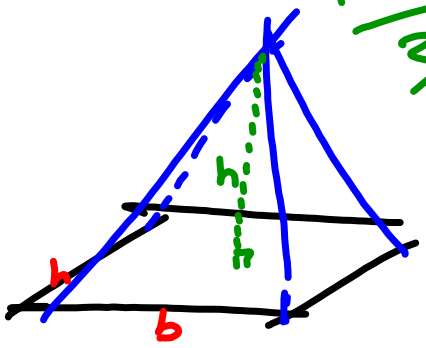
Bh

bh (h)

rectangular Prism

Pointy

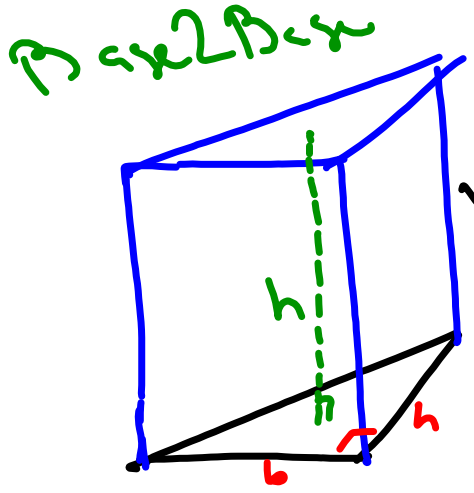
3



rectangular pyramid

$\frac{1}{3}Bh$

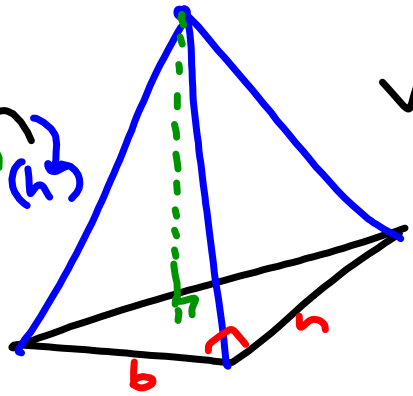
$\frac{1}{3}bh$ (h)



Triangular Prism

$V = Bh$

$\frac{1}{2}bh(h)$



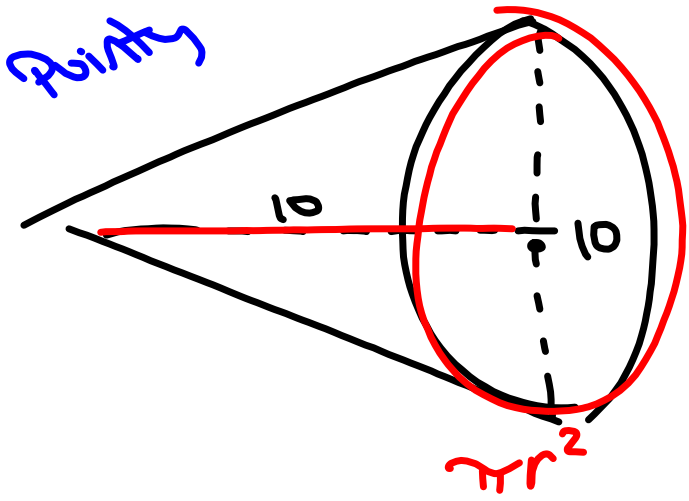
Triangular Pyramid

Pointy

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

$\frac{1}{2}bh$

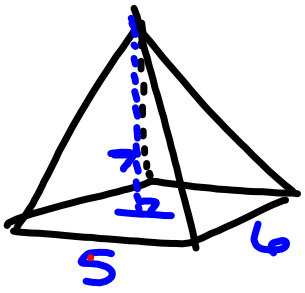
$\frac{1}{3} \cdot \frac{1}{2}(b)(h)(h)$



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

$\frac{1}{3}(\pi r^2)(10)$

$\frac{1}{3}(\pi(5)^2)(10)$



$$V = \frac{(5)(6)(7)}{3}$$

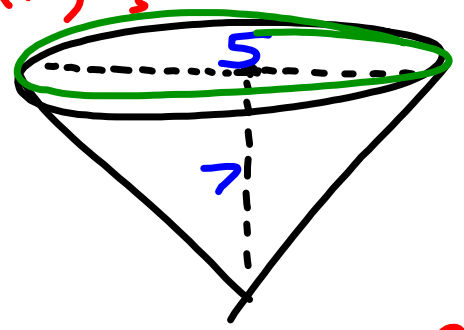
$= 70$ units^3

$\frac{1}{3}Bh$

πr^2

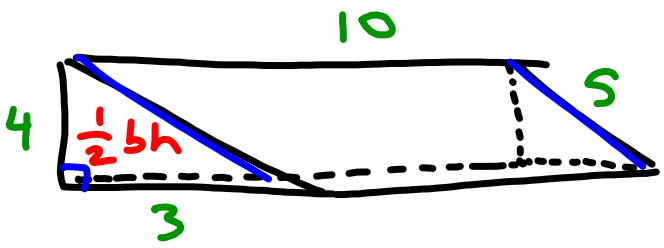
Cone

Pointy $\frac{1}{3}$



$\approx 45.81 \text{ units}^3$

B can 2 Bases

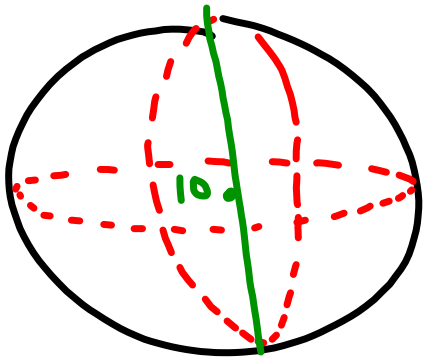


$V = Bh$

$\frac{1}{2}(5)(10)(4)$

$\left(\frac{1}{2}(3)(4)\right)(10)$

$V = 60 \text{ units}^3$

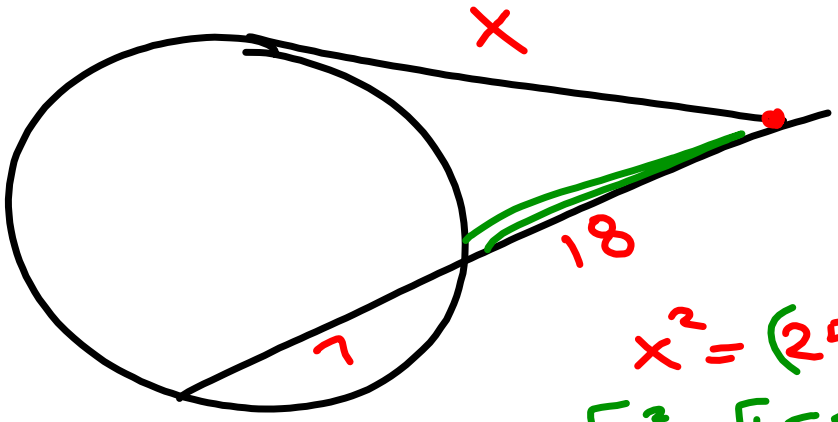


$\frac{4}{3}\pi r^3$

$\frac{4}{3}\pi(\frac{10}{2})^3$

$\frac{4000}{3}\pi$ $\frac{500}{}$

$\frac{500\pi}{3} \approx 523.6$



$x^2 = (25)18$

$\sqrt{x^2} = \sqrt{450}$

$x \approx 21.21$ units