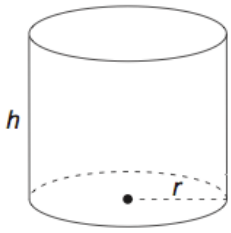
Final Review

Units 6 & 7

I. Volume of Cylinders, Cones & Spheres

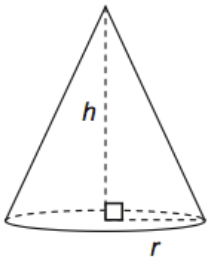
The volume of a three-dimensional figure is the number of cubic units needed to _____ it.

Cylinder



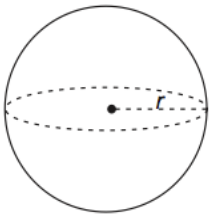
$V = \pi r^2 h$

Cone



$V = \frac{1}{3}\pi r^2 h$

Sphere



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

II. Solving Systems of Equations

A system of equations is a set of two or more equations that use the same variables.

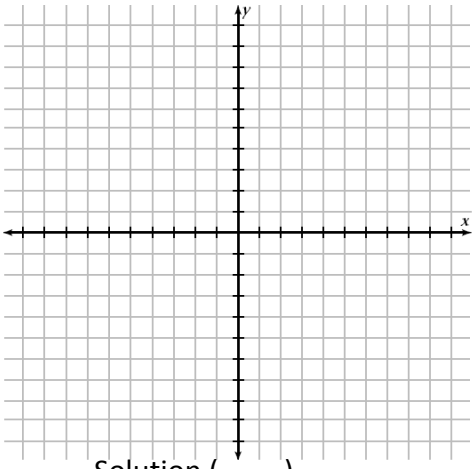
- The solution(s) is where the lines _____.
- Systems can be solved by _____, using _____, or by using _____.
- Systems can have _____ solution, _____ solution, or _____ _____ solutions.

*** Examples: Solve the systems of equations using the indicated method.**

Solve by graphing.

$y = x + 2$

$y = -\frac{1}{2}x + 5$



Solution (,)

Solve using substitution.

$3x + y = 13$

$x = -2y + 1$

Solution (,)

Solve using elimination.

$3x + y = 13$

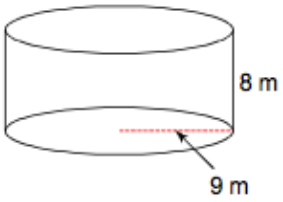
$x + 2y = 1$

Solution (,)

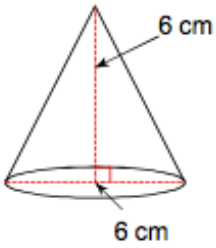
Directions: Find the volume of the given cylinders, cones, and spheres.

- **Write down the formula you will be using for each problem.**
- **You may use a calculator, but you must write down everything you will be plugging into the calculator.**
- **You may use either the calculator π or 3.14.**
- **Round your solutions to the nearest 10^{th}.**
- **Be sure to include units in your final answer.**

1)



2)



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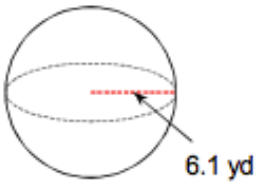

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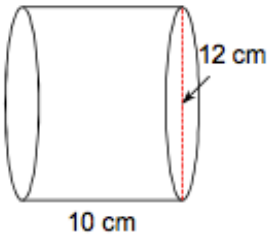
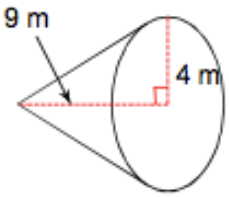
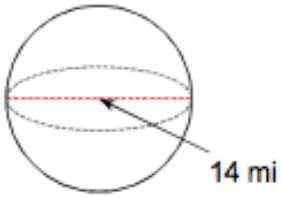


5)

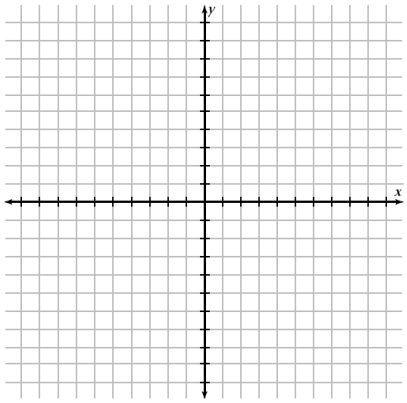


6)



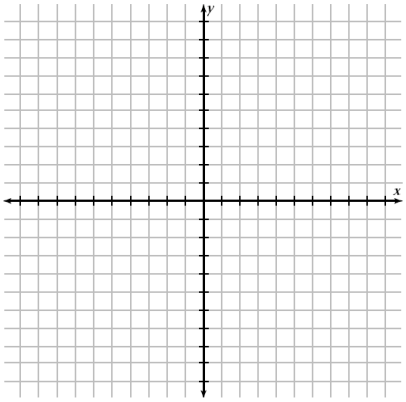
Directions: Solve the systems of equations by *graphing*. If there is no solution or infinitely many solutions, state this.

7) $y = \frac{1}{4}x + 1$
$y = -x + 6$



Solution: (,)

8) $y = \frac{1}{4}x + 2$
$y = -\frac{1}{2}x + 5$



Solution: (,)

Directions: Solve the systems of equations using *substitution*. If there is no solution or infinitely many solutions, state this. Show all work to receive full credit.

9) $y = -3x - 4$
$3x + 4y = 2$

Solution: (,)

10) $y = 5x + 7$
$y = -3x + 23$

Solution: (,)

11) $2x - 3y = 5$
$x + y = -10$

Solution: (,)

Directions: Solve the systems of equations using *elimination*. If there is no solution or infinitely many solutions, state this. Show all work to receive full credit.

12) $\begin{aligned} x + 6y &= 0 \\ 4x - 6y &= 30 \end{aligned}$

Solution: (,)

13) $\begin{aligned} 4x - 6y &= 10 \\ x + y &= -10 \end{aligned}$

Solution: (,)

14) $\begin{aligned} 4x - 6y &= -12 \\ 2x - 3y &= 2 \end{aligned}$

Solution: (,)