Name:_____   Date:_____

Homework sheet: Alg2H
Systems of equations: Graphs_xyz_Cramer

1.

    a. Solve the system of equations:

$$\begin{cases} 2x + 3y = 9 \\ 3x - y = 19 \end{cases}$$

    b. Graph the system of equations using desmos. Do the results agree? Draw the graph (just qualitatively).

2.

    a. Solve the system of equations:

$$\begin{cases} 2x - 3y = 8 \\ 4x - 6y = 12 \end{cases}$$

    b. Graph the system of equations using desmos. Do the results agree? Draw the graph (just qualitatively).

3.

   a. Solve the system of equations:
$$\begin{cases} 2x + y = 8 \\ 4x + 2y = 16 \end{cases}$$

   b. Graph the system of equations using desmos. Do the results agree? Draw the graph (just qualitatively).

4.

   a. Write two equations with solution $(x, y) = (2,3)$.
   b. Plot the system you derived, and verify your answer.

5.

   a. Write two equations with solutions $(x, y) = (2,3)$ AND $(x, y) = (3,6)$. That means, both pairs should be a valid solution to your equations.

   b. Plot the system you derived, and verify your answer.

6.

     a. Write two inconsistent equations, namely with no solution.

     b. Plot the system you derived, and verify your answer.

7. Solve the system of equations:
$$\begin{cases} 24x + 5y = 27 \\ 6x + 3y = 5 \end{cases}$$

8. Solve the following system:
$$\begin{cases} 2x + 3y + 4z = 13 \\ x - 3y + 2z = 11 \\ x - 2y - z = 1 \end{cases}$$

Can you solve it on Desmos? Try with slider for z.

9. Solve the following system, and then check your answer by graphing:
$$\begin{cases} 2x + 3y = 3 \\ x - 3y = 6 \\ 3x - y = 10 \end{cases}$$

10. Cramer's rule.

11. Solve the system using Cramer's rule
$$\begin{cases} 24x + 5y = 27 \\ 6x + 3y = 5 \end{cases}$$