

Solving 2x2 Systems of Equations

- Go to link: <https://www.geogebra.org/m/degps5te>
- Complete the following equations and then use to website to verify your findings.

Remember 2x2 Systems of Equations are set up as:

$$Ax + By = C$$

$$A_1x + B_1y = C_1$$

a. $3x - 2y = 4$
 $-6x + 10y = 2$

$$x = \underline{\quad} \quad y = \underline{\quad}$$

$$a = \underline{\quad} \quad b = \underline{\quad} \quad c = \underline{\quad}$$

$$a_1 = \underline{\quad} \quad b_1 = \underline{\quad} \quad c_1 = \underline{\quad}$$

From Website:

$$x = \underline{\quad} \quad y = \underline{\quad}$$

$$a = \underline{\quad} \quad b = \underline{\quad} \quad c = \underline{\quad}$$

$$a_1 = \underline{\quad} \quad b_1 = \underline{\quad} \quad c_1 = \underline{\quad}$$

b. $5x - 7y = 0$
 $-9x + 9y = 10$

$$x = \underline{\quad} \quad y = \underline{\quad}$$

$$a = \underline{\quad} \quad b = \underline{\quad} \quad c = \underline{\quad}$$

$$a_1 = \underline{\quad} \quad b_1 = \underline{\quad} \quad c_1 = \underline{\quad}$$

From Website:

$$x = \underline{\quad} \quad y = \underline{\quad}$$

$$a = \underline{\quad} \quad b = \underline{\quad} \quad c = \underline{\quad}$$

$$a_1 = \underline{\quad} \quad b_1 = \underline{\quad} \quad c_1 = \underline{\quad}$$

c. $2.5x - 8.5y = 0.5$
 $-0.5x - (-6.5y) = -9.5$

$$x = \underline{\quad} \quad y = \underline{\quad}$$

$$a = \underline{\quad} \quad b = \underline{\quad} \quad c = \underline{\quad}$$

$$a_1 = \underline{\quad} \quad b_1 = \underline{\quad} \quad c_1 = \underline{\quad}$$

From Website:

$$x = \underline{\quad} \quad y = \underline{\quad}$$

$$a = \underline{\quad} \quad b = \underline{\quad} \quad c = \underline{\quad}$$

$$a_1 = \underline{\quad} \quad b_1 = \underline{\quad} \quad c_1 = \underline{\quad}$$

- Using the website set the slides a, b, c, a₁, b₁, and c₁ to the corresponding problems above, to check your answers.
- Did you find the solutions to be the same or different from what you got on your paper?

Solving 2x2 Systems of Equations

5. Now, spend time playing around with the sliders, choosing different numbers for all sliders.

6. List any observations you noticed while playing with the slides.

7. Find the equation(s) that do not produce a solution.
What are they?

8. What is special about these equations in relation to one another?

9. What was the easiest way for you to solve these equations, Substitution, Elimination, or by using the graphing on the website? Explain why.
