

Unit 4 Study Guide

Types of Solutions (Reference: 4A Flipbook)

1. Explain the difference in one solution, no solution, and infinite solutions.



2. How many solutions does the following system of equations have?

$$x + y = 4 \quad x - y = 6$$

$$\begin{array}{r} x + y = 4 \\ x - y = 6 \\ \hline 2x = 10 \\ x = 5 \end{array}$$

$x = 5$, so one solution because 1 value for x + one for y .

3. Describe what the lines of a graph with no solution would look like.

Parallel, meaning they never cross

Graphing Systems (Works to reference: 4A, 4B, 4C, and 4D)

1. Explain the steps to graphing a system of equations that is already in slope-intercept form?

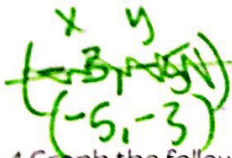
- (1) Plot y-intercept
- (2) Use slope to do rise over run to plot a few more points
- (3) Connect the points

2. Explain the steps you would take to graph a system of equations in standard form.

- (1) move x to the other side
- (2) divide to get y alone
- (3) Simplify, if you can

3. Graph the following system; what is the x-value solution?

$$y = -3/5x - 6 \quad y = x + 2$$



4. Graph the following system; what is the x-value solution?

$$4x - 3y = 18 \quad 2x + y = 4$$

$$\begin{array}{r} 4x - 3y = 18 \\ -4x = -4x \quad -4x = -2x \\ \hline -3y = -4x + 18 \\ \quad \quad \quad -3 \quad \quad \quad -3 \\ \quad \quad \quad y = -2x + 4 \end{array}$$

$y = \frac{4}{3}x - 6$



Substitution/Elimination (4E, 4F, 4G, 4H, 4I, 4J, 4K, and 4L)

1. Explain the steps to use when solving with substitution.

- (1) Rearrange so either x or y is alone
- (2) Plug in to other equation
- (3) Distribute
- (4) Combine like terms

2. Explain the steps to use when solving with elimination.

- (1) Scan from left to right to see if anything cancels (opposite sign, same #)
- (2) Multiply so that something cancels
- (3) Cancel
- (4) Combine like terms
- (5) Solve
- (6) Plug back in

3. Explain when it would be best to use graphing, substitution, and elimination (how can you tell which method to use?)

- Graphing = when there is a fraction + smaller numbers
- Substitution = when it's easy to solve for x or y
- Elimination = when it's easy to cancel

