

$x = 3$

4. What would be the first step you would take if solving the following system by substitution?

$4x - 3y = 18$ $2x + y = 4$
 $4x - 3(-2x + 4) = 18$
 $4x + 6x - 12 = 18$

$10x - 12 = 18$
 $+ 12 = +12$
 $10x = 30$

$2(3) + y = 4$
 $6 + y = 4$
 $-6 = -6$
 $y = -2$

5. What would be the first step you would take if solving the following system by elimination?

$4x - 3y = 18$ $2x + y = 4$
 $3(2x + y - 4)$

$6x + 3y = 12$
 $4x - 3y = 18$
 $10x = 30$

$10x = 30$
 $10 \quad 10 \quad x = 3$

6. Solve the following system, using any method you would like.

$4x - 3(-2x + 4) = 18$
 $4x + 6x - 12 = 18$
 $10x - 12 = 18$
 $10x = 30$
 $x = 3$

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

Substitution!
 $6 + y = 4$
 $-6 = -6$
 $y = -2$
 $(3, -2)$

Systems Word Problems (4Q, 4P, 4Q, 4R, 4S)

1. What are the steps to setting up a systems word problem? How many equations will you have?

- ① Read the problem
- ② Set up 2 equations as either slope-intercept and/or standard form

2. Explain how to solve a systems word problem dealing with perimeter and solve the following: The perimeter of a rectangle is 48 inches. The rectangle is twice as long as it is wide. What is the length of the rectangle?

Doing next unit ;)

3. Explain how to solve a systems word problem dealing with money and solve the following: Ms. Mindy has a collection of nickels and dimes that has a total value of \$12.50. She has 150 coins in all. How many dimes does Ms. Mindy have?

* See work on paper

when dealing w/ money, be sure to write the amount out correctly (nickel = .05, dime = .10)
 $.05x + .10y = 12.50$
 $x + y = 150$

4. Explain how to solve a systems word problem dealing with the sum or difference of two numbers and solve the following: The sum of two numbers is 59. The difference between the two numbers is 11. Which is the smaller of the two numbers?

$x + y = 59$
 $x - y = 11$
 $2x = 70$
 $x = 35$
 $35 + y = 59$
 $-35 \quad -35$
 $y = 24$

5. Explain how to solve a systems word problem dealing with the cost of different items and solve the following: For a school fundraiser, Colin sold 18 bags of popcorn and 40 candy bars, and made \$282. Jaylon sold 17 bags of popcorn and 20 candy bars, and made \$160.50. What was the cost of a bag of popcorn?

Let one thing = x and another = y
 Colin $\rightarrow 18x + 40y = 282$ Jaylon $\rightarrow 17x + 20y = 160.50$

Systems of Inequalities (4T, 4U, 4V, and 4W)

1. Solving a system of inequalities by graphing is just like solving a system of equations by graphing, except there is shading with an inequality. Explain how to determine which direction to shade, including details about dashed and solid lines.

- If $>$ or \geq you shade up/right
- If $<$ or \leq you shade down/left

2. Graph the following inequality: $5x + 5y \leq 10$ and $2x - 3y > 6$

* See work on paper