

**Applications of Systems of
Equations with Three
Variables**

Solve using matrices.

$$-2y - 6z = 4$$

$$y + 4z = -5$$

$$x + 2y + 7z = -1$$

Oct 19-10:25 AM

Oct 19-10:45 AM

Solve using matrices.

$$x - 3y = 0$$

$$2x + 3y + 3z = 18$$

$$x + 2y - 4z = 10$$

Solve using matrices.

$$4x + y = -7$$

$$x - 2z = 4$$

$$3y + 2z = 8$$

Oct 19-10:45 AM

Oct 19-10:46 AM

Your company has three acid solutions on hand: 30%, 40%, and 80% acid. It can mix all three to come up with a 100-gallons of a 39% acid solution. If it interchanges the amount of 30% solution with the amount of the 80% solution in the first mix, it can create a 100-gallon solution that is 59% acid. How much of the 30%, 40%, and 80% solutions did the company mix to create a 100-gallons of a 39% acid solution?

Oct 19-10:24 AM

Five hundred tickets were sold for a certain music concert. The tickets for the adults sold for \$7.50, the tickets for the children sold for \$4.00, and tickets for senior citizen sold for \$3.50. The revenue for the Monday performance was \$3,025. Twice as many adult tickets were sold as children tickets. How many of each ticket was sold?

Oct 19-10:26 AM

Billy's Restaurant ordered 200 flowers for Mother's Day. They ordered carnations at \$1.50 each, roses at \$5.75 each, and daisies at \$2.60 each. They ordered mostly carnations, and 20 fewer roses than daisies. The total order came to \$589.50. How many of each type of flower was ordered?

Oct 19-10:27 AM

The Arcadium arcade in Lynchburg, Tennessee uses 3 different colored tokens for their game machines. For \$20 you can purchase any of the following mixtures of tokens: 14 gold, 20 silver, and 24 bronze; OR, 20 gold, 15 silver, and 19 bronze; OR, 30 gold, 5 silver, and 13 bronze. What is the monetary value of each token?

Oct 19-10:31 AM

Rooney's company decides to buy some keyboards, mouse cursors and PC Cameras. They have a budget of \$1500 to spend on \$30 keyboards, \$20 mice, and \$50 cameras. Additionally, the number of cursors should be equal to that of keyboards and twice the number of cameras.

How many of each item should he buy? Write a system of equations to help you solve this problem.

Oct 19-10:31 AM

Jane is asked to buy some chickens, dogs and ducks for her farm. The total number of animals she needs to buy is 50. She has a budget of \$1500 to spend on \$20/chicken, \$50/dog, and \$30/duck. Additionally, the number of chickens should be equal to that of ducks.

How many of each animal should she buy? Write a system of equations to help you solve this problem.

Oct 19-10:41 AM

An ultimate frisbee team has to order jerseys, shorts, and hats. They have a budget of \$1350 to spend on \$50 jerseys, \$20 shorts, and \$15 hats. They want to buy 40 items in preparation for the oncoming season and must order as many jerseys as shorts and hats combined.

How many of each item should they order? Write a system of equations to help you solve this problem.

Oct 19-10:41 AM

Tasty Bakery sells three kinds of muffins: chocolate chip muffins at 40 cents each, oatmeal muffins at 45 cents each, and cranberry muffins at 50 cents each. Charles buys some of each kind and chooses three times as many cranberry muffins as chocolate chip muffins. If he spends \$7.95 on 17 muffins, how many chocolate chip muffins did he buy?

Oct 19-10:44 AM