

Using Linear Combinations to Solve a Linear System

1. A necklace with 6 large beads and 30 small beads weighs 78 grams. A bracelet with 3 large beads and 10 small beads weighs 29 grams. Write and solve a system to find out how much large beads weigh and how much small beads weigh.

Define the variables

Let _____ = _____

Let _____ = _____

Write an equation for the necklace: _____

Write an equation for the bracelet: _____

Use the elimination method to solve the problem:

2. Suppose your community center sells a total of 292 tickets for a basketball game. An adult ticket costs \$3. A student ticket costs \$1. The sponsors collect \$470 in ticket sales. Write and solve a system to find the number of each type of tickets sold?

Define the variables

Let _____ = _____

Let _____ = _____

Write an equation for the total number of tickets: _____

Write an equation for the total amount of sales: _____

Use the elimination method to solve the problem:

3. Suppose your class sells gift wrap for \$4 per package and greeting cards for \$10 per package. Your class sells 205 packages in all and receives a total of \$1,084. Find the number of packages sold.

Define the variables

Let _____ = _____

Let _____ = _____

Write an equation for the total number of packages: _____

Write an equation for the total amount of sales: _____

Use the elimination method to solve the problem:

4. You have 28 coins that are all nickels (n) and dimes (d). The value of the coins is \$2.05. How many of each coin do you have?

Define the variables

Let _____ = _____

Let _____ = _____

Write an equation for the number of coins: _____

Write an equation for the value of the coins: _____

Use the elimination method to solve the problem: