

And Then There Were Three

You have done a lot of work in *Cookies* with two linear equations in two unknowns. In this activity, you will extend the ideas and techniques you learned to systems of three linear equations in three unknowns.

1. Here is a problem to solve with three equations in three unknowns.

I have some dimes, nickels, and quarters. There are 18 coins in all. The total number of dimes and nickels is equal to the number of quarters. The value of my coins is \$2.85.

How many coins of each kind do I have?

- a. Define your variables carefully.
 - b. Write three linear equations that express the facts in the situation.
 - c. Solve your system of equations.
2. Make up problems for two other situations that can be solved using three variables and three linear equations.
 3. Make up two more systems of three linear equations in three unknowns and try to solve them. (You do not need to make up problem situations for these systems.)
 4. Write down general directions for finding the common solution for a system of three linear equations in three unknowns.

