**CCM8 Systems of Equations: Writing Equations and Solving With Substitution Part 1**

When solving a system of equations, it is often helpful to write equations that can model the situations and then use a method called substitution to solve the system of equations. If both equations are set equal to the same variable, then you can set the equations equal to each other and solve them.

Examples

Solve each system of equations algebraically.

1. Jill and Jeff are both saving their money. Jill already has $55 in her bank account and she can earn $25 a week for doing yard work for her neighbors. Jeff has $80 in his bank account and earns $20 a week for helping his grandmother with her household chores. How long will it take for Jill and Jeff to have the same amount of money?
2. Frank buys two different plants. When he bought the plants, plant A was 2cm tall, and plant B was 5cm tall. Plant A grew at a rate of 1.5cm per day and plant B grew at a rate of 1cm per day. How long does it take for the two plants to reach the same height?

**Independent Practice**

Solve each system of equations algebraically.

1. Kelly wants to buy personalized t-shirts for her friends. One company charges a flat rate of $20 per order and then $5 per shirt. The other company only charges $7 per shirt. When would both companies charge the same amount for the same number of shirts?
2. Susan buys a bag of candy that contains 40 snack size candy bars and eats 2 pieces of candy a day. Tom buys a bag of candy that contains 60 snack size candy bars and eats 4 pieces of candy each day. On what day will Tom and Susan have the same amount of candy?