150 Lecture Notes for Section 1.6
Modeling With Equations

• Setting up Word Problems:
  1. Answer the question asked.
     What is the distance to Aunt Matilda’s house?
     What is the age of Timmie’s great-grandfather?
     What is the speed of the plane flying from New York to Chicago?
  2. Draw a picture, chart, or graph and label with your variable from section 1.
  3. Write an equation
  4. Solve
  5. Check

Interest on an Investment

• Mary invests $100,000 in two accounts, one paying 6% and the other $4\frac{1}{2}$% simple annual interest. If her interest is $5,025 each year, how much is invested at each rate?

Word Problems

• A father is four times as old as his daughter. In 6 yrs, he will be three times as old as she is. How old is the daughter now?

• Madison has twice as many quarters as dimes and the rest in nickels. If the value of the ten coins is $1.40, how many dimes does she have?
• How much 100% orange juice must be added to 900 gallons of 5% orange juice drink to make the mixture 10% orange juice?

• A pasture is twice as long as it is wide. Its area is 115,200 ft\(^2\). How wide is the pasture?

![Diagram of a rectangle with dimensions w and 115,200 ft\(^2\).]

• Find the length \(x\) if the shaded area is 160 in\(^2\).

![Diagram of a rectangle with dimensions a, 14”, b, 13”, and x.]

• Stan and Hilda can mow the lawn in 40 min working together. If Hilda works twice as fast as Stan, how long would it take Stan to mow the lawn alone?