Modeling with Linear Functions

1. Jamie owes her uncle $200. Each week she pays him $5.

    a. Write an equation relating the amount of weeks to the amount Jamie still owes her uncle.

    b. What form is your equation in?

    c. Find the x and y intercepts of the graph and explain what they mean in the context of the situation.

2. You have $100 to spend on a barbeque where you want to serve chicken and steak. Chicken costs $1.29 per pound and steak costs $3.49 per pound.

    a. Write a function that relates the amount of chicken and the amount of steak you can buy.

    b. What form is your equation in?

    c. Find the x and y intercepts of the graph and explain what they mean in the context of the situation.

3. Daisy purchases a gym membership. She pays a signup fee and a monthly fee of $11. After 4 months, she has paid a total of $59.

    a. Write a function that relates the amount of months she is a member and how much she pays for her being a gym member.

    b. What form is your equation in?

    c. How much will Daisy pay after 8 months?

4. An animal shelter asks all volunteers to take a training session and then to volunteer for one shift each week. Each shift is the same number of hours. The table shows the numbers of hours Joan and her friend Miguel worked over several weeks.

Volunteer	Weeks worked	Hours worked
Joan	6	15
Miguel	10	23

a. Write a function that relates the amount of weeks worked with the amount of hours worked.

b. What form is your equation in?

c. Another friend, Lili, plans to volunteer for 24 weeks over the next year. How many hours will Lili volunteer?

5. A gas station has a customer loyalty program. The graph shows the amount of dollars that two members paid for gas.

a. Write a function that relates the number of gallons with the cost.

b. What form is your equation in?

c. How much will a customer pay for 25 gallons of gas?