

LESSON
9.9**Practice A***For use with the lesson "Modeling Relationships"*

1. The total cost of a gym membership after a certain number of months is an annual fee of \$60 plus a charge of \$20 per month. What type of function can be used to model the total cost of the gym membership?
2. A stunt cyclist jumps from a ramp that is 15 feet off the ground to another ramp that is 15 feet off the ground. What type of function can be used to model the jump between the ramps?
3. The swimming pool at a sports complex holds 32,000 gallons of water. It will be drained for repairs at a rate of 80 gallons per minute. What type of function can be used to model the amount of water in the pool?
4. During a target competition, an archer shoots an arrow from 5 feet off the ground. The arrow hits the ground in front of the target which is 200 feet away. Sketch a graph of the path of the arrow.
5. Determine which linear function is increasing at a greater rate.
 - Linear Function 1: The function has an x -intercept of -1 and a y -intercept of 6 .
 - Linear Function 2: The function whose equation is $y = \frac{3}{4}x - 7$.
6. Determine which linear function has the greater minimum.
 - Quadratic Function 1: The function whose equation is $y = x^2 + 2x + 1$.
 - Quadratic Function 2: The function whose equation is $y = x^2 - 4x + 2$.
7. **Saving Account** Jamal opens a savings account with an initial deposit of \$50. He deposits \$10 each week.
 - a. Based on the given information, what is an appropriate type of function to model the balance of the savings account as a function of time?
 - b. Sketch a graph that represents the balance of the savings account for any given week.
 - c. Identify the intercepts and interpret their meaning in the context of the given situation.