

5. You are playing tennis with a friend. The path of the tennis ball after you hit the ball can be modeled by the graph of the equation $y = -0.005x^2 + 0.17x + 3$ where x is the horizontal distance (in feet) from where you hit the ball and y is the height of the ball (in feet) above the court.

- a. What is the maximum height reached by the tennis ball? Round to the nearest tenth of a foot.
- b. Suppose you are standing 30 feet from the net, which has a height of 3 feet. Will the ball clear the net? Explain.
- c. If your friend does not hit the ball back to you, how far from you does the ball strike the ground?

6. A bottle rocket travels along a parabolic path modeled by $y = -\frac{3}{7}(x - 7)^2 + 21$ where x is the horizontal distance in yards from the impact point and y is the height in yards.

- a. How far did the bottle rocket travel?
- b. What was the maximum height of the bottle rocket?