1. Jessica, who has a bionic arm, is crossing a bridge over a small gorge and decides to toss a coin into the stream below for luck. The distance in feet that the coin is above the water is modeled by the equation $y = -16x^2 + 96x + 112$. Where x represents time in seconds.

2. The profits of Mr. Unlucky's company can be represented by the equation $y = -3x^2 + 18x - 4$, where y is the amount of profit in hundreds of thousands of dollars, and x represents the number of years in operation.

3. At a swim meet, Janet dives from a diving board that is 48 feet high. Her position above the water is represented by the equation $h(t) = -16t^2 + 24t + 40$, where t represents time in seconds and h(t) represents height in feet.

4. American astronauts working on a space station on the moon toss a ball into the air. The height of the ball is represented by the equation $f(t) = -2.7t^2 + 13.5t + 14$, where t represents time in seconds since the ball was thrown and f(t) represents height of the ball in feet.

5. Jocelyn and Kelly built a rocket from an assembly kit and are going to launch it. The rocket's height in feet can be described by the equation $g(t) = -16t^2 + 180t$, where t represents time in seconds and g(t) represents height of the rocket in feet.

6. Jason jumped off a cliff into the ocean in Acapulco while vacationing with some friends. His height as a function can be modeled by the equation $y = -16x^2 + 16x + 480$, where x represents time in seconds and y is the height in feet.

7. You and your friend are hiking in the mountains. You want to climb to a ledge that is 20 ft. above you. The height of the grappling hook you throw is given by the function $h(t) = -16t^2 - 32t + 5$. Can you throw it high enough to reach the ledge?

8. During a game of golf, Kayley hits the ball out of a sand trap. The height of the golf ball is given by the equation $y = -16x^2 + 20x - 4$, where y is the height in feet above the ground and x is the time in seconds since the ball was hit. Find how long it takes for Kayley's golf ball to hit the ground.

9. The Empire State Building is 1250 feet tall. If an object is thrown upward from the top of the building at an initial velocity of 38 feet per second, its height s seconds after it is thrown is given by the function $h(s) = -16s^2 + 38s + 1250$.

10. A juggler throws a ball into the air, releasing it 5 feet above the ground with an initial velocity of 15 ft per second. She catches the ball with her other hand when the ball returns to 5 feet above the ground. The path of the ball from hand to hand is given by the function $h(t) = -16t^2 + 15t$.

11. The height, h(t), in feet, of an object shot from a cannon with initial velocity of 20 feet per second can be modeled by the equation $h(t) = -16x^2 + 20t + 6$, where t represents time in seconds after the cannon is fired.

12. In baseball, the flight of a pop-up may be described as h(t), in feet, of an object shot from a cannon with initial velocity of 20 feet per second can be modeled by the equation $d = -16x^2 + 80x + 3.5$, where d gives the ball's height above the ground in feet as a function of x.

13. When a gray kangaroo jumps, its path through the air can be modeled by the equation $y = -0.0267x^2 + 0.8x$, where x is the kangaroo's horizontal distance traveled (in feet) and y is its corresponding height (in feet).

14. The entrance to an athletic field is in the shape of a parabolic archway. The archway is modeled by the equation $d = 12x - x^2$, where d represents the distance, in feet, that the arch is above the ground for any x value.

15. The height of a flare fired from the deck of a ship in distress is modeled by the equation $h = -16t^2 + 104t + 56$, where h is the height of the flare above the water and t is time in seconds.