Use the formula $h = -4.9t^2 + vt + s$ where h is in meters and the formula $h = -16t^2 + vt + s$ when h is in feet. *Use a separate paper if you need more room to show your work.*

1. A ball is thrown upward with an initial speed of 24.5 m/s. When is it 19.6 m high? (2 answers)

2. A watermelon is dropped from a bridge that is 208 feet high. How long will it take for the watermelon to hit the water under the bridge?

3. A park has a vertical motion ride where passengers are launched straight upward from ground level with an initial velocity of 96 ft/s. How many seconds after launch will the car reach 144 ft.?

4. Mitch tossed an apple up to Kathy, who was on a balcony 40 ft. above him, with an initial speed of 56 ft/s. Kathy missed the apple on the way up, but caught it on its way down. How long was the apple in the air?

5. A rocket is fired upward with an initial velocity of 160 ft/s.
  a. When is the rocket 400 ft. high?

  b. How do you know that 400 ft. is the greatest height the rocket reaches?

6. A rocket is fired upward with an initial speed of 1960 m/s. after how many minutes does it hit the ground.