

### Problem Solving - Section 6.8

1. A cannonball is shot from a cannon on top of a cliff. The height  $h$  in feet of the cannonball at  $t$  seconds is given by  $h = -16t^2 + 40t + 56$ .
  - (a) How high is the cannonball at 2 seconds?
  - (b) At what time does the cannonball hit the ground below?
2. I want to build a swimming pool for which the length is 12 meters longer than the width. If I want the pool to have an area of  $160 \text{ m}^2$ , what should the dimensions be?
3. The sail on your sailboat has a height that is 4 times the base. If the area of the sail is  $32 \text{ m}^2$ , what is the height and the base of the sail?