

## 5.9: Problem Solving Given Equations

### Example 1:

A ball is thrown upward from the balcony of an apartment building and falls to the ground. The height of the ball,  $h$  metres above the ground after  $t$  seconds is given by the function

$$h(t) = -5t^2 + 15t + 45.$$

- a) Determine the **maximum** height of the ball.

What **form** of the equation would be helpful here and why? Vertex \ Factored \ Standard

$$h(t) = -5t^2 + 15t + 45$$

- b) How long does it take the ball to reach its **maximum** height?

- c) How high is the **balcony**?

What form of the equation would be helpful here and why? Vertex \ Factored \ Standard

