Name:_____

1) The population (in thousands) for Alpha City, t years after January 1, 2004 is modeled by the quadratic function $P(t) = 0.3t^2 + 6t + 80$.

In what year does Alpha City's population reach twice its initial (1/1/2004) population?

What will the population of Alpha City be on January 1, 2016?

2) A ball is thrown straight up, from ground zero, with an initial velocity of 48 feet per second.
Find the maximum height attained by the ball. When does this occur?

How long does it take for the ball to return to ground zero?

3) From the top of a 48 feet tall building, a ball is thrown straight up with an initial velocity of 32 feet per second.
Find the maximum height attained by the ball. When does this occur?

How high will the ball be after 2.5 seconds?

How long does it take for the ball to hit the ground?