M$5 Homework 37

1. The profits of an Internet auction company can be represented by $P = -t^2 + 8t + 12$, where P represents profits in hundreds of thousands of dollars and t represents the years since the company started (let 2000 be $t = 0$). According to the model, in what year will the company have maximum profits? What will the maximum profits be?

2. For which quadratic equation is the axis of symmetry $x = 3$?

(1) $y = x^2 + x + 3$ (3) $y = x^2 + 6x + 3$

(2) $y = -x^2 + 6x + 2$ (4) $y = -x^2 + 3x + 5$

3. The height of a projectile is modeled by the equation $y = -2x^2 + 38x + 10$, where x is time, in seconds, and y is height, in feet. During what interval of time, to the *nearest tenth of a second*, is the projectile *at least* 125 feet above ground? [*Only a graphic solution will be accepted*.]