4. [4 points] Write the function, $f(x) = -2(x+3)^2 + 5$, in the general form, $ax^2 + bx + c$. Show work.

5. [4 points] Use the discriminant to determine how many x-intercepts the function, $f(x) = 2x^2 + 6x + 4.5$ will have. Show work.

6. [10 points] A cannonball that is fired out to sea from a shore battery follows a parabolic trajectory given by the graph of the equation $h(x) = 8 + 11x - .02x^2$ where $h(x)$ is the height in feet of the cannonball above the water when it has traveled a horizontal distance of x feet.

   a. Find the vertex of the trajectory and explain what the vertex represents in terms of the cannonball's flight.

   b. Find the x-intercepts of the trajectory and explain what each x-intercept represents in terms of the cannonball's flight.

7. [6 points] Describe the formula using the language of proportionality.

   $V = \frac{1}{27}s^3$ where V is volume, in cubic yards and s is the length of the side of a cube, in feet.