Name _____

- **Write as neatly as you can!**

- **No calculators are allowed.**

- **You must show your work to obtain full credit.**

1. (*5 points*) Suppose at time $t = 0$, a child drops a ball from a skyscraper that is 1296 feet tall. The height of the ball at time t is given by the polynomial $H(t) = -16t^2 + 1296$.

    (i) Find the height after 4 seconds. (No need to simplify to get the square root value).

    (ii) When will the ball hit the ground?

    (Notice that the initial height is 1296 feet and height decreases with time and eventually becomes 0 when it hits the ground.)

2. (*5 points*) Compute the following expression and write the answer in scientific notation:

$$\frac{3.6 \times 10^8 + 4 \times 10^7}{2 \times 10^3}$$

3. (*1 point, extra credit*) Suppose there is a rectangular box with length ℓ, width w and height h. Find the expression that gives the **surface area** of the box in terms of ℓ, w and h.