4. [11 points] Zach is playing the retro video game *Plaque-Man* all day to get a new personal high score. Zach starts playing the game with 0 points. Over the course of each hour, Zach scores an additional 2500 points. At the **beginning** of every hour, Zach trades 20% of his points to buy extra time. For $n \geq 1$, let H_n be Zach's score at the **end** of the nth hour of playing the game.
For example, $H_1 = 2500$.

a. [4 points] Write expressions for H_2 and H_3. Your answers should not involve the letter H. You do not need to simplify your expressions.

$H_2 =$ _____

$H_3 =$ _____

b. [4 points] Write a **closed-form** expression for H_n. *Closed-form* means your answer should not include ellipses $(\ldots)$ or sigma notation (Σ), and should not be recursive. You do not need to simplify your closed-form expression.

Answer: $H_n =$ _____

c. [3 points] Find Zach's eventual score if he keeps playing *Plaque-Man* indefinitely. You do not need to simplify your numerical answer.

Answer: _____