4. [8 points] A new cryptocurrency ExpCoin was created to have its value grow exponentially over time. The value, in dollars, of one ExpCoin \( t \) years after ExpCoin was invented is given by

\[ V(t) = 900(3)^{2t-2}. \]

Fill in the blanks below with correct numbers given in exact form.

a. [2 points] One ExpCoin was worth $\underline{\hspace{2cm}}$ when ExpCoin was invented.

b. [2 points] The yearly growth factor of ExpCoin is $\underline{\hspace{2cm}}$.

c. [4 points] The value of one ExpCoin grows by $\underline{\hspace{2cm}}\%$ per day. Note that this problem is about the daily not yearly growth rate. Assume for this problem that there are 365 days in one year.

5. [10 points] At Rowena’s trading card store, she sells regular cards and foil cards. All the cards are rated on their rarity \( R \) which is a number between 0 and 15. A regular card of rarity \( R \) costs \( h(R) \) dollars, while a foil card of rarity \( R \) costs \( f(R) \) dollars. Suppose both \( h(R) \) and \( f(R) \) have inverse functions.

a. [3 points] Give a practical interpretation of the expression \( h^{-1}(12) \).

b. [3 points] Write an equation, possibly involving the functions \( h \) and \( f \), that expresses the following: “A regular card of rarity 7 costs $100 more than twice the cost of a foil card of rarity 3.”

c. [4 points] Give a practical interpretation of the equation \( h(f^{-1}(729)) = 180 \).