Quiz: HSA.SSE.A.1a

1. An investor purchases a certificate of deposit, which has a fixed interest rate for the life of the investment.

   The value of the investment as a function of time in years is given by the expression $2{,}500(1.011)^t$.

   The initial investment is $\$$_____.

   The annual interest rate is _____%.

   The investment has a term of _____ years.

   Write the answers in the spaces provided.

2. The half-life of a substance is the length of time it takes for a specific property to decrease by half. The concentration of a medicine in the blood stream has a half life, and substances have half lives based on the time it takes for the radioactivity of a specific isotope to fall to half of its original value.

   The expression $1200(1-0.5)^{0.5t}$ represents the concentration of an antibiotic in the bloodstream of livestock after t hours.

   Which statements about the expression are correct?

   Select all that apply.

   A. The first factor is the initial dose of the pain reliever.

   B. The coefficient on t is the half-life of the pain reliever in hours.

   C. The exponent is the number of half-lives.

   D. The factor $(1-0.05)$ is the fraction of the antibiotic in the bloodstream at any time that will remain after the next half-life.