3. [8 points] Let $S(t)$ be the amount of shrimp (in thousands) living in a lake t years after January 1, 2000, where

$$S(t) = 3.27(1.3)^t.$$

    a. [3 points] In how many years, after January 1, 2000, will the number of shrimps in the lake have increased by 75%? Your answer must be exact or accurate up to the first two decimals.

$$t = \underline{\hspace{4in}}$$

    b. [2 points] What is the continuous growth rate per year of the population of shrimps? Your answer must be exact or accurate up to the first two decimals.

Answer: $\underline{\hspace{3in}}$

    c. [3 points] Let $f(p)$ be the amount of shrimps, in thousands, p **months** after January 1, 2000. What is the growth factor of the function $f(p)$? Your answer must be in **exact** form.

Answer: $\underline{\hspace{3in}}$