Unit 2 Practice Problems

1. A culture of bacteria grows by 40% each hour. Write an exponential growth model for the population P(t) after t hours if the initial population is 500.

2. Describe how the graph of $y = log_{10}x$ is transformed to obtain $y = 2log_{10}(x - 4) + 1$. List shift, stretch/compression, and reflecion if any.

3. Solve for x: $log_2(x + 3) = 4$

4. A radioactive substance has a half-life of 8 years. If the initial mass is 100 grams, write the decay model and find the mass after 20 years.

5. Rewrite the exponential equation $y = 3^{x+2}$ in logarithmic form.