Exponential and Logarithmic Functions - Worksheet - 2

1. Expand the following logarithmic functions

   a. $\log_b \left(x^2 \sqrt[5]{2y} \right)$

   b. $\log_3 \frac{\sqrt{a}}{5b^4}$

2. Condense the following logarithmic functions

   a. $\log 8 - \log 25$

   b. $3\log_4 x - \frac{1}{2}\log_4 3 - \log_4 y$

3. Evaluate the following logarithms using change of base

   a. $\log_2 10$

   b. $\log_4 100$

   c. $\log_5 20$

   d. $\log_3 25$

4. Solve the following exponential equations for x

   a. $2^{x+2} = 2^{2x-6}$

   b. $3^{4x-1} = 3^{x+11}$

   c. $2^{4x-2} = 8^x$

   d. $5^{3x-4} = 25^{x+1}$

5. Solve the following exponential equations for x

   a. $5^{x-2} = 4^{2x+6}$

   b. $7^{2x+1} = 3^{x+2}$

6. How much would you have if you invested $20000 at 8% interest compounded continuously for 10 years?

7. How long would you have to invest at 5% interest compounded continuously in order to double your initial investment?