1. Rewrite the following exponential statements as logarithmic statements. \((\text{EXP} \rightarrow \text{LOG})\)

   a. \(125 = 5^3\)
   b. \(2^6 = 64\)
   c. \(4^x = 16\)
   
   d. \(243 = x^5\)
   e. \(e^x = 9\)
   f. \(x = e^5\)

2. Rewrite the following logarithmic statements as exponential statements. \((\text{LOG} \rightarrow \text{EXP})\)

   a. \(3 = \log_2(8)\)
   b. \(5 = \log_x(243)\)
   c. \(\log_6(x) = 3\)
   
   d. \(\ln(x) = 5\)
   e. \(\log_4(256) = 2x\)
   f. \(x = \ln(3)\)
3. Evaluate the following basic logarithm statements.
   a. $\log_2(32)$
   b. $\log_7(49)$
   c. $\log_6(6)$
   d. $\log_4(256)$
   e. $\log(1000)$
   f. $\ln(e^7)$

4. Evaluate the following logarithm statements.
   a. $\log_5(5^{12})$
   b. $(\log_3(3^x))^2$
   c. $\log_3(9^3)$
   d. $\log_2(16^5)$
   e. $4^{\log_4(16)}$
   f. $3^{\log_3(81)}$
   d. $5^{\log_5(12)}$
   e. $4^{\log_4(32)}$
   f. $e^{\ln(5x)}$
Evaluate the following using the prime factorization of $9^4$.

\[ \log_3(9^4) \]

Evaluate the following using a recognized property.

\[ \log_3(9^4) \]

5. Rewrite each of the following using the property above.
   a. \( \log_5(25^3) \)
   b. \( \log_2(14^5) \)
   c. \( \ln(9^3) \)

Evaluate the following with your calculator by changing the base to 3 decimal places
   (show the work to provide reasoning)

\[ \log_2 9 = x \]

6. Evaluate the following with your calculator by changing the base to 3 decimal places
   a. \( \log_5(50) \)
   b. \( \log_8(12) \)
   c. \( \log_4(4194304) \)

   d. \( \log_3(212) \)
   e. \( \log(532) \)
   f. \( \ln(28) \)