1. Write each expression as a single logarithm.
   (a) $3\ln(x) + 2\ln(y)$

   (b) $\frac{1}{2}\log_2(x) - 2\log_2(y) + \log_2(z)$

   (c) $\ln(7) + 3$

2. Find a function of the form $f(x) = ae^{bx}$ with the given function values.
   a. $f(0) = 2, f(2) = 5$

   b. $f(0) = 4, f(3) = 1$

3. (a) Explain why $2 = e^{\ln(2)}$

   (b) Use part (a) to explain why $2^{\square} = e^{\ln(2)\square}$

   (c) Use part (b) to explain why $\log_2(x) = \frac{\ln(x)}{\ln(2)}$