Lesson 1 Practice Problems

1. Find the value of each variable that makes the equation true.

   a. $2^5 \cdot 2^3 = 2^a$

   b. $\frac{7^4}{7^b} = 7^{-2}$

   c. $8^c = \frac{1}{64}$

2. Select **all** the expressions equivalent to $7^{-2} \cdot 7^5 \cdot 7^{-3}$.

   A. 0

   B. 1

   C. $\frac{1}{7}$

   D. 7^0

   E. 7^{10}

3. Which expression is equal to $\frac{3^8}{3^2}$?

   A. 1^6

   B. 3^{-6}

   C. 3^4

   D. 3^6

4. Find the value of each variable that makes the equation true.

   a. $\frac{5^6}{5^m} = 5^9$

   b. $2^3 \cdot 4^n = 2^{11}$

   c. $(7^4)^k = 7^{-8}$

5. a. Evaluate the expression $\frac{6^3}{6^3}$.

   b. Explain how this helps show why $6^0 = 1$.