LESSON 110 Review Quiz

Take the quiz and record your score on your grading sheet. You may use a calculator unless otherwise specified. After the quiz, make sure you review what you missed.

1. $\log_2 1 + \log_2 2 + \log_2 8$

What is the value of the expression above? Do not use a calculator.

2. $\log_2 5 = \dfrac{\ln b}{\ln a}$

The change-of-base formula is used above to rewrite the logarithm as a ratio of logarithms. What are the values of a and b ?

3. $\log_2 \dfrac{2x^2}{7}$

Expand the expression above completely as a sum, difference, and/or constant multiple of logarithms.

4. $3\log_5 x + \log_5 8 - 2\log_5 2$

Condense the expression above as a single logarithm.

5. $\log x + \log(x+2) = \log 8$

Solve the equation above.

6. $\log x = 1 - \log(x-3)$

Solve the equation above.

7. $e^{x-3} - 2 = 7$

Solve the equation above. Leave your answer in terms of ln.

8. Which statement is NOT true about $f(x) = \log_2 x$? Select all that apply.

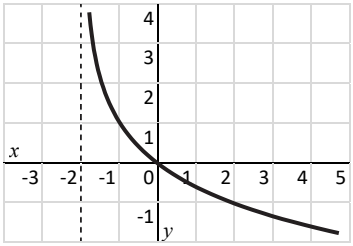
A) The domain is $(0, \infty)$.

B) The range is $(0, \infty)$.

C) The asymptote is $y = 0$.

D) $f(x)$ decreases as x approaches 0.

9. Which function is graphed below? The dotted line indicates the asymptote



A) $f(x) = \log_2(x+2) + 1$

B) $f(x) = \log_2(x+2) - 1$

C) $f(x) = -\log_2(x+2) + 1$

D) $f(x) = -\log_2(x+2) - 1$

10. The population of a town is 20,000 and is decreasing at a rate of 5% per year. How long, to the nearest year, will it take the population to drop to 15,000?