

Chapter 8 Test – Exponential and Logarithmic Functions

Part A (21 problems-no calculator)

#1-3-Rewrite the equation in exponential form (8.4)

EX: $\log_3 9 = 2$

#4-9-Evaluate the expressions (8.4)

EX: $\log_{\frac{1}{3}} 27$

EX: $\ln e^{-5}$

#10-15-Simplify the expression (8.4)

EX: $12^{\log_{12} 2x}$

EX: $\log \frac{1}{10,000}$

#16-17-Find the inverse of the function (8.4)

EX: $y = \log_6 x$

EX: $y = \ln(x - 3) + 2$

#18-19-Expand the expression (8.5)

EX: $\log_7 2xy^2$

EX: $\ln \frac{5x}{\sqrt[3]{y}}$

#20-21-Condense the expression (8.5)

EX: $2\log_6 14 + 3\log_6 x - \log_6 7$

Part B (15 problems-scientific calculator)

#22-23 Evaluate and round to the thousandths (8.4)

EX: $\ln 8.8$

EX: $\log\left(\frac{4}{5}\right)$

#24-26-Use the properties of logarithms to rewrite the expression in terms of $\log 3$ and $\log 5$; then use $\log 3 \approx 0.477$ and $\log 5 \approx 0.699$ to approximate the expression. (8.5)

EX: $\log 15$

EX: $\log\left(\frac{5}{3}\right)$

EX: $\log 27$

#27-Use the change-of-base formula to evaluate the expression $\log_5 23$. (8.5)

#28-31-Solve exponential & logarithmic equations (8.6- review examples from notes)

#32-33-Word problems – depreciation (8.2-pg. 476 ex 4) & compounded interest (8.1-pg.471 #60)

#34-36-Graph the function, state the domain & range. (8.3-pg. 484 #67 & 8.4-pg. 491 #72-73)

Chapter Review Games and Activities

For use after Chapter 8

Match the graph with the type of function by placing the appropriate lower case letter in the blank in front of the numbered name of the function.
Match the equations with a capital letter in the blank behind the name of the function. You must use all graphs. One of the functions will have two answers.

a. $y = \left(\frac{1}{2}\right)3^x$

b. $y = -5\left(\frac{2}{3}\right)^x$

c. $y = 4\left(\frac{2}{3}\right)^x$

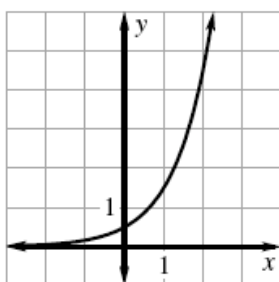
d. $y = \ln(x - 2)$

_____ 1. Exponential growth _____

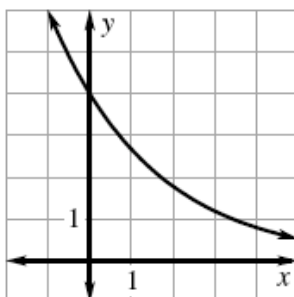
_____ 2. Exponential decay _____

_____ 3. Logarithmic _____

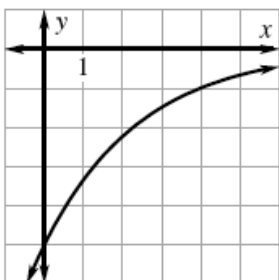
A.



C.



B.



D.

