

Review Lessons 7.5 & 7.6 Worksheet

Name: _____

Use $\log 4 \approx 0.602$ and $\log 7 \approx 0.845$ to evaluate the logarithm.

1.) $\log \frac{7}{4}$

2.) $\log 28$

3.) $\log 256$

4.) $\log 49$

5.) $\log 112$

6.) $\log \frac{49}{64}$

Expand the expression.

7.) $\log_3 3x$

8.) $\log \frac{2x}{5}$

9.) $\log_7 x^2y$

10.) $\log \frac{100x^2}{y}$

11.) $\ln 5xy^3$

12.) $\log_9 \frac{2x^3}{3}$

Condense the expression.

13.) $\log_3 4 + \log_3 2 + \log_3 2$

14.) $\log 3 + \frac{1}{2}\log x - \log 5$

15.) $4 \ln x - 5 \ln x$

16.) $5 \log_4 2 + 7 \log_4 x + 4 \log_4 y$

17.) $0.5 \ln 100 - 2 \ln x + 8 \ln y$

Use the change-of-base formula to evaluate the logarithm. Round to 4 decimal places when necessary.

18.) $\log_3 10$

19.) $\log_{2.2} 22$

20.) $\log_7 \frac{3}{16}$

Solve the equation. Check for extraneous solutions. Round your solution to three decimal places if necessary.

21.) $2^{x+1} = 16^{x+2}$

22.) $e^{-x} = 4$

23.) $3^{2x} + 5 = 13$

$$24.) 3^{x+1} - 5 = 10$$

$$25.) \log_4(4x + 7) = \log_4 11x$$

$$26.) \frac{3}{4}e^{3x} - 8 = -6$$

$$27.) \log_2(3x - 1) = 8$$

$$28.) 3 \ln x - 7 = 4$$

$$29.) \ln 3x - \ln 2 = 4$$

$$30.) \log_6(x + 9) + \log_6 x = 2$$

31.) The average weight y (in kilograms) of an Atlantic cod from the Gulf of Maine can be modeled by $y = 0.51(1.46)^x$ where x is the age of the cod (in years). Estimate the age of a cod that weighs 15 kilograms.

32.) You deposit \$100 into an account that pays 6% annual interest compounded daily. How long will it take for the balance to reach \$1,000.