

Lesson 7.6 Worksheet

Name: _____

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

1.) $5^{x-4} = 25^{x-6}$

2.) $8^{x-1} = 32^{3x-2}$

3.) $36^{5x+2} = \left(\frac{1}{6}\right)^{11-x}$

4.) $8^x = 20$

5.) $e^{-x} = 5$

6.) $11^{5x} = 33$

7.) $10^{3x} + 4 = 9$

8.) $-3e^{2x} + 16 = 5$

9.) $\frac{1}{3}(6)^{-4x} + 1 = 6$

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

10.) $\ln(4x - 7) = \ln(x + 11)$

11.) $\log_6(3x - 10) = \log_6(14 - 5x)$

$$12.) \log_4 x = -1$$

$$13.) 5 \ln x = 35$$

$$14.) \frac{1}{3} \log_5 12x = 2$$

$$15.) \log_2(x - 4) = 6$$

$$16.) \log_2 x + \log_2(x - 2) = 3$$

$$17.) 2 \log_7(1 - 2x) = 12$$

$$18.) \log_6(2x - 6) + \log_6 x = 2$$

19.) You deposit \$500 in an account that pays 3.25% annual interest compounded monthly. About how long does it take for the balance to quadruple?

20.) You deposit \$700 in an account that pays 2.75% annual interest compounded continuously. About how long does it take to reach a balance of \$1,000?