

Unit 5: Exponential Functions and Equations

PRACTICE · SET 2

Name: _____ Date: _____

Solve each problem. Give exact answers where asked, or round to the nearest hundredth as directed. Show the value only.

1. Solve for x : $10^x = 1000$. Give the exact value of x .

Answer: _____

2. Solve for x : $2^x = 32$. Give the exact value of x .

Answer: _____

3. Evaluate log base 3 of 81. (That is, find $\log_3(81)$.)

Answer: _____

4. Solve for x : $5^x = 20$. Round to the nearest hundredth. (Use $x = \log(20)/\log(5)$.)

Answer: _____

5. Solve for x : $e^x = 7$. Round to the nearest hundredth. (That is, find $\ln(7)$.)

Answer: _____

6. Solve for x : $3^{(x+1)} = 27$. Give the exact value of x .

Answer: _____

7. A population grows continuously as $P = 500 \cdot e^{(0.04t)}$, where t is in years. Find the population when $t = 10$. Round to the nearest whole number. (Use $e^{(0.4)} \approx 1.4918$.)

Answer: _____

8. Solve for t : $e^{(0.05t)} = 2$. Round to the nearest hundredth. (Use $t = \ln(2)/0.05$.)

Answer: _____

9. Evaluate log base 2 of $(1/8)$. (That is, find $\log_2(1/8)$.)

Answer: _____

10. Solve for x : $4 \cdot 2^x = 64$. Give the exact value of x .

Answer: _____

11. An investment grows continuously as $A = 1000 \cdot e^{(0.06t)}$, where t is in years. Find the amount when $t = 5$. Round to the nearest cent. (Use $e^{(0.3)} \approx 1.34986$.)

Answer: _____

12. Solve for x : $7^{(2x)} = 49$. Give the exact value of x .

Answer: _____