

Unit 5 Test Review

Find the inverse of each function.

1) $y = \log_4(x) - 4$

2) $y = \log_3(x-2)$

3) $y = \log_5(x+1)$

4) $y = \log_6(x) + 7$

5) $y = \log_4(x-8) - 1$

6) $y = \log_2(x+2) - 3$

7) $y = \log_3(x+7) + 8$

8) $y = \log_5(x+8) - 6$

9) $y = \log_6(x+4) + 3$

10) $y = \log_2(x-1) - 10$

11) $y = 4^x + 9$

12) $y = 2^x + 2$

13) $y = 3^{x-4} + 1$

14) $y = 6^{x+9} - 3$

15) $y = 4^x - 3$

16) $y = 6^{x-5}$

17) $y = 8^{x-2}$

18) $y = 9^{x+3} + 2$

19) $y = 3^{x-5} - 7$

20) $y = 4^{x-1} + 5$

<p>21. In the year 1980, the tuition at a private college was \$18,000. During the next 9 years, tuition increased by about 5.5% each year.</p> <p>a. Write a model giving the cost C of tuition at the college t years after 1989.</p> <p>b. What was the tuition in 2005?</p> <p>c. What year was the tuition \$27,000? Give the answer to 3 decimal places.</p>	<p>22. You purchase a stereo system for \$1000. The value of the stereo system decreases 8% each year.</p> <p>a. Write an exponential decay model for the value of the stereo system in terms of the number of years since the purchase.</p> <p>b. What is the value of the system after 2 years?</p> <p>c. When will the stereo be worth half the original value?</p>
<p>23. You deposit \$3,000 in a savings account. The savings account earns 4% interest for 5 years. What is the balance in the account if the interest is compounded:</p> <p>a. Semi-annually</p> <p>b. Quarterly</p> <p>c. Monthly</p> <p>d. Continuously</p>	<p>24. You purchase a car for \$12,000. The value of the car decreases 15.2% each year.</p> <p>a. Write an exponential decay model for the value of the car in terms of the number of years since the purchase.</p> <p>b. What is the value of the car after 2 years?</p> <p>c. What is the value of the car after 5 years?</p>