

**9 Chapter 9 Test, Form 1** (continued)

11. Use  $\log_5 2 \approx 0.4307$  to approximate the value of  $\log_5 4$ .  
 A. 0.8614      B. 0.8980      C. 1.3652      D. 0.1855      11. \_\_\_\_\_
12. Solve  $\log_6 10 + \log_6 x = \log_6 40$ .  
 F. 180      G. 4      H. 5      J. 30      12. \_\_\_\_\_
13. Solve  $4^x = 20$ . Round to four decimal places.  
 A. 0.4628      B. 1.5214      C. 0.6990      D. 2.1610      13. \_\_\_\_\_
14. Solve  $3^x \geq 21$ . Round to four decimal places.  
 F.  $x \geq 0.8451$       G.  $x \geq 2.7712$       H.  $x \geq 0.3608$       J.  $x \geq 7.0000$       14. \_\_\_\_\_
15. Express  $\log_9 22$  in terms of common logarithms.  
 A.  $\log \frac{22}{9}$       B.  $\log 198$       C.  $\frac{\log 22}{\log 9}$       D.  $\frac{\log 9}{\log 22}$       15. \_\_\_\_\_
16. Evaluate  $e^{\ln 4}$ .  
 F.  $e^4$       G.  $4^e$       H.  $\ln 4$       J. 4      16. \_\_\_\_\_
17. Solve  $e^x > 2.7$ .  
 A.  $x < 0.9933$       B.  $x > 0.9933$       C.  $x > 1.0668$       D.  $x < 1.0668$       17. \_\_\_\_\_
18. Solve  $\ln 3x = 1$ .  
 F. 20.0855      G. 0.3333      H. 0.9061      J. 8.1548      18. \_\_\_\_\_
19. **AUTOMOBILES** Lydia bought a car for \$20,000. It is expected to depreciate at a rate of 10% per year. What will be the value of the car in 2 years? Use  $y = a(1 - r)^t$  and round to the nearest dollar.  
 A. \$16,200      B. \$16,000      C. \$19,980      D. \$18,050      19. \_\_\_\_\_
20. **ART** Martin bought a painting for \$5,000. It is expected to appreciate at 4% per year. How much will the painting be worth in 6 years? Use  $y = a(1 + r)^t$  and round to the nearest cent.  
 F. \$6200.00      G. \$5360.38      H. \$37,647.68      J. \$6326.60      20. \_\_\_\_\_

**Bonus** Evaluate  $3 \log_2 64 + e^{\ln 5} + \log_{\frac{1}{3}} 9$ .      **B:** \_\_\_\_\_