

## Chapter 5 Practice Test

1. Rewrite  $14^{x+2} = 33$  in logarithmic form.

2. Rewrite  $\log_2(x-3) = 4b$  in exponent form.

For #3 & 4 describe the transformations from the parent function  $f(x) = 3^x$

3.  $g(x) = 4 - 3^{x+2}$

4.  $g(x) = -2 + 3^{-x}$

Solve for x

5.  $e^{2x} = e^{x^2-63}$

6.  $4(7)^x - 4 = 360$

7.  $\left(\frac{1}{3}\right)^x = 9^{x+3}$

8.  $e^x = 21$

9.  $\log(x) + \log(x+4) = \log(x+40)$

10.  $3e^{2x+2} = 63$

11.  $\log_3(x+5) - \log_3(x-3) = 3$

12.  $\log_{22} 5$

13.  $\log_5 x = 3.4$

14.  $30 = 2^{x-5} - 21$

15.  $3^{2x+1} = 81^{x-1}$

16. Graph  $y = \log_2(x+3)$  and state the asymptote, x-intercept and domain

**Rewrite as a single log**

17.  $\frac{1}{3}\log x + 2\log y - \log z + 4\log b$

18.  $2\ln c - \ln b + 3\ln d$

**Use the properties of logs to expand the expression as a sum or difference of logs with no exponents**

19.  $\log_4 64x^3y$

20.  $\log \frac{3x^4}{y^3}$

21. You have \$2,200 to invest in two different banks. Bank A pays 6.2% annual interest compounded quarterly and bank B pays 6.15% compounded continuously.

a. Write an equation modeling the situation for both banks.

b. How much money will you have in the bank after 5 years?

c. How long will it take you to reach \$5,000 in bank A?

d. How long will it take you to triple your money in bank B?