

## Exponentials and Logs Test Review WS #2

Solve each of the following exponential equations. Round to three decimals when necessary.

1.  $2^x = 7$

2.  $4^{x+1} = 3$

3.  $7 \cdot e^{x-3} = 57$

4.  $8e^{2x} = 20$

5.  $e^{3-2x} = 4$

6)  $5^{2x-1} = 7^{1-x}$

7.  $4^x - 5 = 3$

8.  $4 - 2e^x = -23$

9.  $3^{x+1} = 3^2$

Solve the following logarithmic equations. Round to three decimals when necessary. Check your answer

10.  $\ln x = 8$

11.  $\log_2(x + 2) = 5$

12.  $\log_7(25 - x) = 3$

13.  $4 + 3 \log(2x) = 16$

14.  $\log(x + 2) + \log(x - 1) = 1$

15.  $5 \ln(3 - x) = 4$

16.  $\log_2(x + 2) = \log_2 x^2$

17.  $\ln(x + 5) = \ln(x - 1) - \ln(x + 1)$

18.  $-5 + 2 \ln 3x = 5$

19.  $\log_5(-4r - 8) = \log_5(r + 7)$

Condense each expression to a single logarithm.

24.  $2 \log_7 x - 4 \log_7 y$

25.  $5 \log_9 a + 15 \log_9 b$

26.  $3 \log_2 x - 4 \log_2 (x + 3)$

Expand each logarithm.

27.  $\log_2(x^2y)$

28.  $\log_6\left(\frac{a^4}{b}\right)$

29.  $\log_2\left(\frac{8x^4}{5}\right)$

Rewrite each into logarithmic form:

33.  $3^x = 12$

34.  $2^{-1} = \frac{1}{2}$

35.  $e^x = 15$

Rewrite each into exponential form:

36.  $\log_{49} 7 = \frac{1}{2}$

37.  $\ln 14 = x$

38.  $\log_2 \frac{1}{4} = -2$

