

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.

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

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

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

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:

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

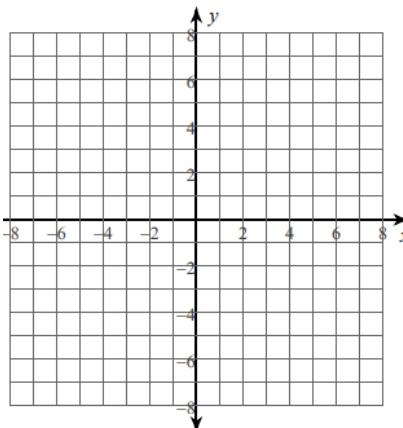
$$37. \ln 14 = x$$

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

Graph Log functions. Identify ordered pairs, VA, Domain, Range, Asymptote, x-intercept

39)

$$y = \log_3(x - 1) - 3$$

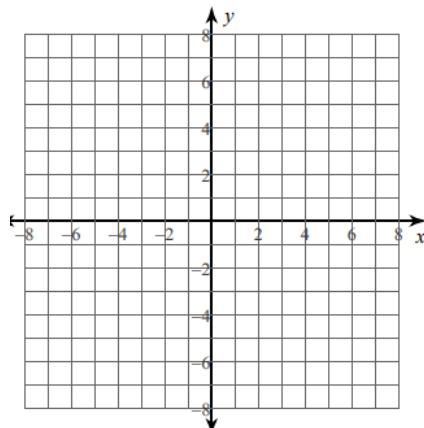


Domain: _____ Range: _____

Asymptote: _____ x-int: _____

40)

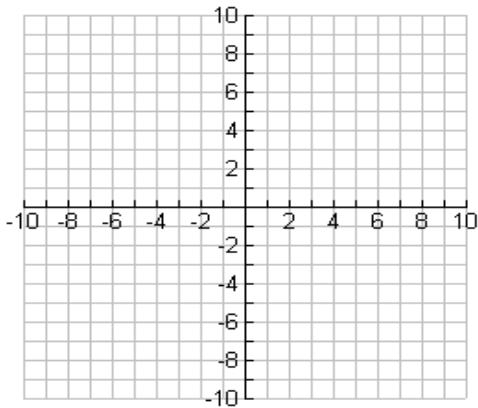
$$y = \log_{\frac{1}{3}}(x + 4)$$



Domain: _____ Range: _____

Asymptote: _____ x-int: _____

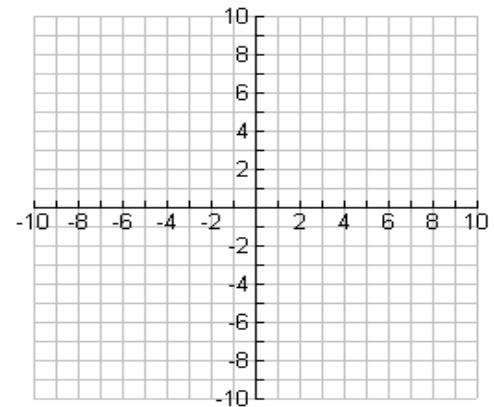
41) $g(x) = -2 \ln x + 3$



Domain: _____ Range: _____

Asymptote: _____ x-int: _____

42) $f(x) = \log_2(x + 6) - 1$



Domain: _____ Range: _____

Asymptote: _____ x-int: _____