

1. Growth or Decay: $f(x) = \left(\frac{5}{2}\right)^{x-4} + 1$
2. Growth or Decay: $f(x) = (0.5)^{x+3} - 7$
3. Identify the domain and range of the function in #1: Domain: Range:
4. Identify the domain and range of the function in #2: Domain: Range:
5. What is the equation for the horizontal asymptote of the function in question one?
6. What is the equation for the horizontal asymptote of the function in question two?
7. Identify the domain and range of the logarithmic function: $y = \log_3(x + 8) + 6$
8. Identify the domain and range of the logarithmic function: $y = \log_2(x - 1) - 5$
9. Identify the equation for the vertical asymptote of the function in question seven:
10. Identify the equation for the vertical asymptote of the function in question eight:
11. Identify the transformations of the function in #1 from $f(x) = \left(\frac{5}{2}\right)^x$:
12. Identify the transformations of the function in #2 from: $f(x) = 0.5^x$:
13. Evaluate: $\log_8 \frac{1}{4096}$
14. Evaluate: $\log_{16} 1024$
15. Evaluate: $\log_7 343$
16. Convert to logarithmic form: $7^{-3} = \frac{1}{343}$
17. Convert to exponential form: $\log_3 81 = 4$
18. Evaluate: $\log_2 64$
19. Evaluate: $\log_{196} 14$
20. Evaluate: $\log_6 \frac{1}{216}$
21. Solve: $\log_4(7x + 1) = 3$
22. Solve: $\log_5(2x - 13) = 4$
23. Use properties of logs to solve: $\log_3 7x + \log_3 2 = \log_3 56$
24. Use properties of logs to solve: $3\log_2 x - \log_2 3 = \log_2 243$
25. Use properties of logs to solve: $\log_2 x + \log_2(x - 7) = \log_2 60$
26. Use properties of logs to solve: $\log_5 48 - \log_5 x = \log_5 12$

27. Condense: $\log_5 17 + \log_5 m + 3 \log_5 n$

28. Expand: $\log_2 \frac{g^4}{9hk^2}$

29. Condense: $\log 13 - \log c + 4 \log d$

30. Expand: $\log_7 \frac{8}{wx}$

31. Give a SPECIFIC value of n would make the function exponential decay function? $f(x) = \left(\frac{2}{n}\right)^x$

32. Give a SPECIFIC value of n would make this function exponential growth function? $f(x) = \left(\frac{7}{n}\right)^x$

33. Solve for the value of the variable: $\log_2(2x - 17) = 8$

34. Solve for the value of the variable: $\log_8(x + 9) = 3$

35. Use properties of logs to solve: $\log_2 x + \log_2 6x = \log_2 96$

36. Use properties of logs to solve: $\log_7(x - 2) - \log_7(3x - 11) = \log_7 2$

37. Use properties of logs to solve: $\log_4 x + \log_4(x + 3) = \log_4 40$

38. Use properties of logs to solve: $3 \log_2 x + \log_2 5 = \log_2 1080$

39. Use properties of logs to solve: $\log_5 6x - \log_5(x + 4) = \log_5 4$

Problems #40 through 50 are for FOURTH PERIOD only:

40. Solve for the value of the variable: $27^{-2x} = 81^{x-5}$

41. Solve for the value of the variable: $125^{x+2} = 625^{x+2}$

42. Solve for the value of the variable: $3^{x+6} = 80$

43. Solve for the value of the variable: $18 + 2^{3x} = 101$

44. Solve for the value of the variable: $15e^{x^2+2} = 45$

45. Solve for the value of the variable: $e^{4x} = 60$

46. Solve for the value of the variable: $\ln(x - 3) = 13$

47. Solve for the value of the variable: $\ln(2x) = 8$

48. Find the equation for the inverse function: $y = 5^{x+1} - 6$

49. Find the equation for the inverse function: $y = \log_3(x - 9) + 2$

50. Find the equation for the inverse function: $y = \log_2(x + 3) - 1$