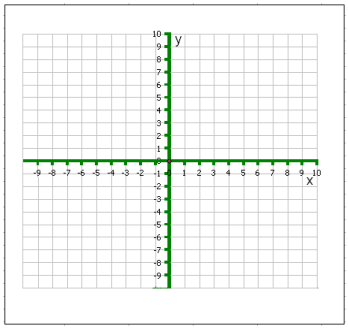
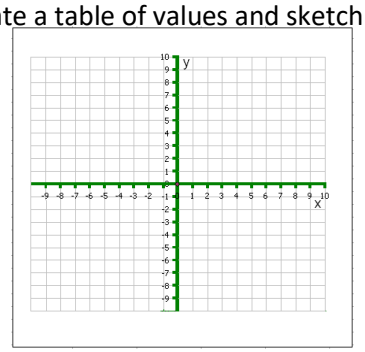
Review Sheet for Exponential and Logarithmic Equations and Functions TEST:

1. Identify the function as Growth or Decay: $f(x) = (\frac{4}{3})^{x+5} - 10$
2. Identify the function as Growth or Decay: $f(x) = (0.75)^{x-2} + 3$
3. What is the domain and range of the function in #1?
4. What is the domain and range of the function in #2?
5. What are the transformations from the parent function $f(x) = (\frac{4}{3})^{x}$ in #1?
6. What are the transformations from the parent function $f(x) = (0.75)^{x}$ in #2?
7. What value of n would make this function an exponential decay function? $f(x) = (\frac{n}{5})^{x}$
8. What value of n would make this function an exponential growth function? $f(x) = (\frac{n}{5})^{x}$
9. Evaluate: $\log_5 \frac{1}{625}$
10. Evaluate: $\log_{64} 512$
11. Evaluate: $\log_2 128$
12. Solve for the value of the variable: $4^{x+3} = 2^{5x}$
13. Solve for the value of the variable: $16^{-2x} = 64^{x+6}$
14. Solve for the value of the variable: $25^{x-2} = 125^{x+4}$
15. Solve for the value of the variable: $5^{x-6} = 90$
16. Solve for the value of the variable: $13 + 2^{3x} = 71$
17. Solve for the value of the variable: $2e^{x^2+2} = 16$
18. Solve for the value of the variable: $e^{2x} = 50$
19. Solve for the value of the variable: $\ln(x + 5) = 11$
20. Solve for the value of the variable: $\ln(3x) = 6$

21. Convert to exponential form: $\log_3 27 = 3$
22. Convert to logarithmic form: $3^{-4} = \frac{1}{81}$
23. Solve for the value of the variable: $\log_3(2x + 11) = 4$
24. Solve for the value of the variable: $\log_2(6x - 40) = 5$
25. Use properties of logs to solve:$\log_2 x + \log_2 4x = \log_2 144$
26. Use properties of logs to solve: $\log_7(x + 5) - \log_7(2x - 7) = \log_7 5$
27. Use properties of logs to solve: $\log_4 x + \log_4(x - 9) = \log_4 22$
28. Use properties of logs to solve: $3\log_2 x + \log_2 7 = \log_2 448$
29. Use properties of logs to solve: $\log_5 6x - \log_5(x + 4) = \log_5 9$
30. Identify the domain and range of the logarithmic function: $y = \log_5(x - 3) - 2$
31. Identify the domain and range of the logarithmic function: $y = \log_2(x + 6) + 1$
32. Create a table of values and sketch a graph for the logarithmic function in #28:



33. Create a table of values and sketch a graph for the logarithmic function in #29:



34. Identify the transformations from the parent function$y = \log_5 x$ for the function in #28?
35. Identify the transformations from the parent function $y = \log_2 x$ for the function in #29?