Exponential and Logarithmic Graph Worksheet

DO NOT WRITE ON THIS WORKSHEET

Analyze and graph the following exponential and logarithmic graphs. Your analysis of each function must include:

- Domain
- Range
- Horizontal Shift (HS)
- Vertical Shift (VS)
- Reflection
- Asymptote Equation
- X intercept
- Y intercept
- End Behaviors

Graph each function after having analyzed the function and compute 3 "good" graph values. Do NOT graph these on your graphing calculator and do NOT use the table function for values. You will not have graphing calculators for next week's test. Dot and label the asymptote on your graph.

Exponential Functions.

1. $y = 2^{x+3} - 1$
2. $y = 3\left(\frac{4}{3}\right)^{x-2} + 1$
3. $y = \frac{1}{2}(2)^{x-1} - 4$
4. $y = \left(\frac{1}{2}\right)^{x+2} + 3$
5. $y = -3\left(\frac{2}{3}\right)^{x+1} - 2$
6. $y = \left(\frac{1}{3}\right)^{x-1} - 1$
7. $y = 2e^{x-1} + 2$
8. $y = \frac{1}{2}e^{-x} - 2$

Log Functions

9. $y = \log_2(x+1) + 2$
10. $y = \log_2(x+3) - 2$
11. $y = \log_3(x-2) + 3$
12. $y = -1 + \log_3(x+2)$

Solve using properties of logs

13. $\log_{10}(2x+5) = \log_{10}(5x-4)$
14. $\log_3(4x+5) - \log_3(3-2x) = 2$
15. $\log_2(x+3) + \log_2(x-4) = 3$
16. $\log_9 x + \log_9(x-2) = \log_9 3$