Algebra 2 NAME:_____

Chapter 12 **PRACTICE** Quest (12.3, 12.4, 12.7)

Solve the exponential equations by **Taking a Log of Both Sides** (calculator required)

1. $14^x = 71$ 1._____

2. $20^{6x} = 130$ 2._____

Solve the simple logarithmic equations

3. $\log_x 27 = 3$ 3._____

4. $\log_{64} x = \frac{1}{4}$ 4._____

5. $\log_{12} x = -1$ 5._____

6. $\log_x 4 = 2$ 6._____

Evaluate the logarithms

7. $\log_5 \frac{1}{25}$ 7._____

8. $\log_{81} 9$ 8._____

Expand the logarithmic expressions

9. $\log_6(6x^2y)$ 9._____

10. $\log_9 \frac{y^2}{7}$ 10._____

Condense the logarithmic expressions—and simplify if possible

11. $3\log 4 - 2\log 4$ 11._____

12. $6\log x + \log y + \log 100$ 12._____

Solve the exponential equations by **Changing The Base**

13. $4^{x+2} = 16^{7x}$

14. $2^{3x+1} = 8^{x+9}$

13._____

14._____

Solve the Logarithmic Equation (condense and use 'wheel')

15. $\log_5(8x) - \log_5 9 = 1$

16. $\log_4(x-7) + \log_4 3 = 2$

15._____

16._____