Algebra 2 Name _____
Notes and Examples DAY 1
Section 7.5 Exponential and Logarithmic Equations Hour _____ Date _____

An exponential equation is any equation that contains the form b^{cx}, such as $a = b^{cx}$ where the exponent includes a **variable**.

A logarithmic equation is an equation that includes one or more **logarithms** involving a variable.

You can use logarithms to solve exponential equations. You can use exponents to solve logarithmic equations.

EXAMPLES:
Solve each equation for x. Round your answer to the nearest ten-thousandth if necessary.

1. $16^{3x} = 8$

2. $27^{2x} = \frac{1}{9}$

3. $15^{3x} = 285$

4. $8 + 3^x = 10$

5. $4^{3x} = 64$

6. $2^{5x+1} = 32$

7. $2^x = 3$

8. $8 + 10^x = 1008$

9. $9^{2y} = 66$

7-5 Practice

Form G

Exponential and Logarithmic Equations

Solve each equation.

1. $8^{2x} = 32$

2. $7^{n} = 343$

3. $9^{2x} = 27$

4. $25^{2n+1} = 625$

5. $36^{-2x+1} = 216$

6. $64^{x} = 4096$

Solve each equation. Round answers to the nearest hundredth.

7. $5^{2x} = 20$

8. $8^{n+1} = 3$

9. $4^{n-2} = 3$

10. $4^{3n} = 5$

11. $15^{2n-3} = 245$

12. $4^{x} - 5 = 12$