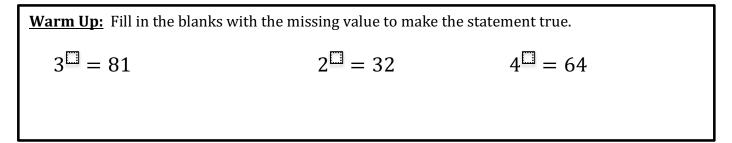
Integrated Math 3 Unit 8: Exponential & Logarithmic Functions 8.1

Name: _____

Date:_____ Period:_____

Objective: To solve exponential equations with common bases



Example 1: Simplifying Exponential Expressions

The key is making all bases the same so that exponent properties hold

A.) $\frac{8^{x-1}}{2^x}$ B.) $7^{2x} * 49^{x-4}$ C.) $3^x * 27 * 3^{x-1} * \left(\frac{1}{9}\right)^{2x-1}$

Example 2: Solving Exponential Equations

The key is making the left side and right side have the same base. Once they look the same, then the exponents form their own equation

A.)
$$4^x = 4^{2x+1}$$
 B.) $3^{2x} = 3^{x-5}$

G.) $25^{x^2} = 5^{x+3}$

H.) $125^{x^2} = 5^{-7x-2}$

E.) $2^{4x} = 32^{x-1}$

F.) $2^{x+1} = 8^{3x-2}$

C.) $7^{3x-3} = 7^{x+22}$

D.) $27^x = 9^{x-3}$