Name: _____ Date: _____ Class: _____

Solving Exponential and Logarithmic Equations 1

Exponential equations are equations in which variable expressions occur as exponents.

Logarithmic equations are equations that involve logarithms of variable expressions.

Ex. 1 Solve by equating exponents

Solve: $8^x = 4^{x+1}$

Solve: $\frac{1}{5}^x = 25^{x+2}$

YOU TRY!

Solve: $64^x = 16^{x+1}$

Solve: $3^{7x-3} = \frac{1}{9}^{2x}$

Ex. 2 Solve by taking a logarithm of each side

Solve: $8^x = 23$

Solve: $7^{x-1} = 23$

YOU TRY!

Solve: $6^x = 27$

Solve: $15 = 11^{2x+1}$

Ex. 3 Solve by taking a logarithm of each side

Solve: $9^{3x+2} - 6 = 5$

Solve: $3(2^x) + 2 = 11$

YOU TRY!

Solve: $2^{3x+2} - 2 = 7$

Solve: $1 = 2(5^{x-1}) + 1$