

# Pre-Calculus: Sec. 3.4

## Exponential and Logarithmic Equations(day 1)

### Solving More Complex Exponential Equations:

1. Isolate the exponential expression.
2. Change to logarithmic form or take *log* or *ln* on both sides.
3. Solve for  $x$ .

**Ex. 1: Solve for x. Round your answer to three decimal places.**

$$a) \quad 4^{2x-3} - 3 = 137$$

$$b) \quad 4e^{7x} + 10 = 22$$

$$c) 4(3^{2x-3}) - 3 = 17$$

$$d) \frac{119}{e^{6x} - 14} = 7$$

$$e) \left( 4 - \frac{2.471}{40} \right)^{9t} = 21$$

$$f) e^{4x-5} + 10 = 12$$

# Solving Quadratic Form Equations

**Ex. 2: Solve for x.**

$$a) e^{2x} - 5e^x + 6 = 0$$



$$b) 3^x + 4(3^{-x}) = 5$$

$$c) \quad e^x - 36e^{-x} = -9$$

**Ex. 3: Solve for x. Round your answer to three decimal places.**

a)  $2^{x+1} = 3^{2x-1}$

$$b) \quad 5^{4x-2} = 2^{x+1}$$

Ex.4 : Factor each. Simplify completely.

a)  $7x^{3/7} - 14x^{6/7} + 21x^{10/7}$

b)  $x^{7/3} - x^{4/3} - 2x^{1/3}$

c)  $2(x+5)^{-1/2} - (x+5)^{-3/2}$

d)  $18(x-1)^{-2} - 9x(x-1)^{-4}$