LT ~~A4~~4a How do I solve exponential Equations for x?

1/4

Ex1:

$$3^{2x} - 12 = 15$$
$$+12 \quad +12$$

1. Isolate the exponent

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

2. Convert from exponential to Log

$$2x = \log_3 27$$

3. Simplify the Log

$$2x = \frac{\log 27}{\log 3}$$

$$\frac{2x}{2} = \frac{3}{2}$$

4. Solve for x

$$x = \frac{3}{2} \text{ or } 1.5$$

Ex2: $\frac{4}{4} \cdot 2^{x-1} = \frac{28}{4}$

$2^{x-1} = 7$

$x-1 = \log_2 7$

$x-1 = \frac{\log 7}{\log 2}$

$x-1 = 2.81$

$+1 \quad +1$

$x = 3.81$

A. $x = \log_6 15$

$x = \frac{\log 15}{\log 6}$

B. $4^x = 24$

$x = \log_4 24$

$x = \frac{\log 24}{\log 4}$

C. $\log_3 x = 5$

$x = 3^5$

D. $x = \log 1000$