Solve Exponential and Logarithmic Equations

Ex 1: Solve each exponential equation. When necessary, round to the nearest thousandth.

A. $2^{x+5} = {}^{-3}$

B. $7^{3x+4} = 49^{2x+1}$

C. $27^{4x-1} = 9^{3x+8}$

D. $10^{3x-10} = \left(\frac{1}{100}\right)^{6x-1}$

E. $8^{x} = 20$

F. $7^{6x} = 12$

G. $4e^{3x} = 1$

H. $7^{2x-3} - 4 = 14$

I. $3(2^{x+6}) = 17$

J. $5^{x+1} = 3^{2x-1}$

Ex 2: Solve the exponential equation by factoring.

$2^{2x} - 12 \cdot 2^x + 32 = 0$

Ex 3: You deposit $700 in an account that pays 2.5% annual interest. HOw long does it take the balance to reach the following amounts?

A. $1000 when interest is compounded quarterly

B. $1500 when interest is compounded yearly

C. $2000 when interest is compounded continuously