Solving Exponential and Logarithmic Equations

Directions: Solve each exponential equation.

1. $2^{x+2} = 16^{5x}$

2. $27^{x+1} = 81^{x+5}$

3. $\left(\frac{1}{5}\right)^{x} = 125^{x^2}$

4. $7^{4-x} = 1$

Directions: Solve each exponential equation. Round your answer to the nearest thousandth.

5. $2^{5x} = 3000$

6. $8^{x-2} = 250$

7. $14^{3x-4} = 10^{x-1}$

Directions: Solve each logarithmic equation. Round your answer to the nearest thousandth.

8. $\log(x-2)=3$

9. $\log_4 x-\log_4(x-2)=\frac{2}{3}$

10. $\log_6 x+\log_6(x-8)=\log_6 20$