Pre-Calculus 3.4 review worksheet Name _____

1. $8^{x+4} = 32^{3x}$

2. $8^x - 1 = 3.4$

3. $11^{x+1} = 7^{x-1}$

4. $\log(3x+2) = 1 + \log 2x$

5. $\ln x + \ln(x+2) = \ln 63$

6. $6^x = 28$

7. $12^{3x+11} = 144^{2x+7}$

8. $-8\log b = -64$

9. $\ln(x^2+5) = \ln 41$

10. $8.3e^{9x} = 24.9$

11. $\log 50x = 2 + \log(2x-3)$

12. PCR (Polymerase Chain Reaction) is a technique commonly used in forensics labs to amplify DNA. PCR uses an enzyme to cut a designated nucleotide sequence from DNA and then replicates the sequence. The number of identical nucleotide sequences *N* after *t* minutes can be modeled by $N(t) = 100 \cdot 1.17^t$. At what time will there be 10,000 sequences?