Secondary 3 Name_____

8-5 Classwork

Date_____ Period____

Solve each equation.

1) $27^{-2k-3} = 81^{-k}$

2) $625^{3x} = 25$

Solve each equation. Round your answers to the nearest ten-thousandth.

3) $-11^{7n} = -1$

4) $5^{3b} - 8 = 12$

5) $18^{-3n} + 6.7 = 36$

6) $e^{k+3} - 2 = 76$

7) $3.9e^{m-7} = 10$

8) $9e^{8v} = 77$

9) $-2e^{p+4} = -35$

10) $5e^{r-2} = 96$

11) The equation $y = 6.72 \cdot 1.014^{x}$ models the world's population, y, in billions of people, x years after the year 2000. Find the year in which the world population is about 8 billion.

Solve each equation.

12) $\log_4 (x - 10) + \log_4 9 = \log_4 24$

13) $\log_8 (x - 5) + \log_8 7 = 2$

14) $\log_8 (x^2 + 7) + \log_8 4 = 2$

15) $\log_5 (x^2 - 10) - \log_5 3 = \log_5 2$

16) $\ln 6 - \ln (x - 3) = \ln 39$

17) $\ln 3x^2 - \ln 3 = 4$