Algebra 3 – Chapter 4 Quiz

Name: _____ Hour: _____

**State the transformations of the following exponential functions from their parent functions.**

1. $f(x) = 3(2)^{x+4}$

2. $g(x) = -4^x - 3$

**Evaluate the following logs.**

3. $\log_4 \frac{1}{64}$

4. $\log_7 \sqrt[3]{7^4}$

**State the following transformations of the logarithm functions from the parent function $f(x) = \log_b x$**

5. $f(x) = \log_2(x - 6) + 3$

**Condense the following logarithmic expression using properties of logarithms.**

6. $\frac{1}{2}\log_3 x + 2\log_3 y - \log_3 z$

**Expand the following logarithmic expression using properties of logarithms.**

7. $\log \sqrt[2]{\frac{x}{y}}$

**Solve the following exponential or logarithmic equation.**

8. $e^{1-8x} = 7957$

9. $7 + 3\ln x = 6$

**Complete the following word problem.**

10. In 1910, the population of Chicago was 2,185,283. The population grew to 3,376,438 by 1930. Model the growth of the city using an exponential growth model and find k, the rate of growth.