**Algebra 2 Exponential/Logarithmic Review Name:**

**Determine whether each equation represents exponential growth or exponential decay.**

**Write an exponential function to model each situation. Find the value after 5 years.**

The population of Olintown (305 people) is increasing at an annual rate of 12%.

A $16000 car depreciates 11% each year.

**Radium has a half-life of 1620 years. Write the decay function for a 30 mg sample. Find the amount of radium remaining after 140 years.**

**Write an exponential equation whose graph passes through the given points.**

 and

**Graph each exponential function. Label two points and the asymptote.**



**Use the continuously compounded interest formula to find the amount using the given conditions.**

 principal: $4000

 annual interest rate: 3.6%

 time: 4 years

**Write each equation in logarithmic form.**

**Write each equation in exponential form.**

**Use your calculator to evaluate each of the following. Round to four decimal places.**

**Graph each logarithmic function. Label two points and the asymptote.**



**Write each logarithmic expression as a single logarithm.**

**Expand each logarithm.**

**Evaluate each using the Change of Base Formula.**

**Solve each equation. Round your answers to the nearest hundredth if necessary.**

**Algebra 2 Exponential/Logarithmic Review KEY**

**Determine whether each equation represents exponential growth or exponential decay.**

 GROWTH DECAY

**Write an exponential function to model each situation. Find the value after 5 years.**

The population of Olintown (305 people) is increasing at an annual rate of 12%.

 , about 538 people

A $16000 car depreciates 11% each year.

, about $8934.50

**Radium has a half-life of 1620 years. Write the decay function for a 30 mg sample. Find the amount of radium remaining after 140 years.**

, about 28.26 mg

**Write an exponential equation whose graph passes through the given points.**

 and

**Graph each exponential function. Label two points and the asymptote.**



 asymptote asymptote

**Use the continuously compounded interest formula to find the amount using the given conditions.**

 principal: $4000

 annual interest rate: 3.6%

 time: 4 years

**Write each equation in logarithmic form.**

**Write each equation in exponential form.**

**Use your calculator to evaluate each of the following. Round to four decimal places.**

**Graph each logarithmic function. Label two points and the asymptote.**



 asymptote asymptote

**Write each logarithmic expression as a single logarithm.**

**Expand each logarithm.**

**Evaluate each using the Change of Base Formula.**

**Solve each equation. Round your answers to the nearest hundredth if necessary.**