*Review 6.4-6.5*

1. Use the exponential equality to solve each equation. Round your answers to 4 decimal places as needed.

a. = b. =

2. Solve each exponential equation. Give answers in exact form, then estimate to 4 decimal places.

a. 7(1.2 – ) = 0.63 b. 25 = 9

3. Solve = graphically.

4. Given that = 1.7712 and = 2.1827, use the properties of logarithms to

estimate the value of the following expressions. Round your answers to 4 decimal places as

needed.

a. b.

5. Use the properties of logarithms to rewrite as a single logarithm.

6. Expand in terms of simpler logarithms. Assume that all variable expressions are

positive real numbers.

7. Use properties of logarithms to solve the exponential equation. Round your answer to 4 decimal places as needed: 3 = 3081

8. Use properties of logarithms to solve each logarithmic equation. Round your answers to 4 decimal places as needed.

a. b. 6 + = 8 c. + =

9. Solve the literal equation for *T*:

10. Graph the function *y* = by applying the change of base formula.

11. According to the Motion Picture Association of America, the number of digital 3D

screens worldwide has increased dramatically during the last years, representing about

half of all digital screens in the world. The function *P*(*t*) = models the

number of digital 3D screens worldwide for *t* number of years after 2005. Using this model,

estimate when the number of digital 3D screens worldwide reached approximately 9,000.

Solve algebraically and answer in a complete sentence. Round your answer to the nearest

whole number. *Source: mpaa.org.*

12. In 2006, a company sold 2,340 units. The company’s accountant noticed a 4.6% continuous annual increase in the number of units sold between 2006 and 2012.

a. Write an exponential function *N*(*t*) that models the number of units sold by the company,

where *t* is the number of years after 2006.

b. Find and interpret *N*(4). Round your answer to the nearest whole number. Answer in a

complete sentence.

c. If this growth rate continues, use your model to estimate when the company will sell

approximately 6,000 units. Solve algebraically and round your answer to the nearest whole

number.

13. Suppose you want to invest $5,000 in an account for *t* years.

a. Find the accumulated amount (future value) if you invest this money at 3.5% interest

compounded quarterly for 20 years. Round your answer to the hundredth.

b. Compare this return with the same principal compounded weekly for 20 years.

Answer in a complete sentence.

c. How much money would you have in your account after the 20 years if you invested your

$5,000 at 3.75% compounded continuously? Round your answer to the nearest dollar.

14. How much money must you invest today if you want to see your money grow to $500,000 in

30 years at 5% annual interest compounded monthly? Round to the nearest dollar.