

- Given the exponential decay function  $g(t) = 40e^{-0.2t}$ , evaluate  $g(5)$ ,  $g(-3)$ ,  $g(0)$ , and  $g(.5)$  accurate to the third decimal place.  
 $g(5)$  \_\_\_\_\_,  $g(-3)$  \_\_\_\_\_,  $g(0)$  \_\_\_\_\_, and  $g(.5)$  \_\_\_\_\_
- Suppose that \$2,000 is deposited in a savings account with an annual interest rate of 11%. Calculate the amount of money in the account at the end of 5 years if the interest is compounded quarterly, compounded monthly and compounded continuously.  
compounded quarterly \_\_\_\_\_, compounded daily \_\_\_\_\_  
compounded monthly \_\_\_\_\_ and compounded continuously \_\_\_\_\_
- Suppose that a principal of \$3500 is deposited in a savings account whose annual rate of interest is 9%. Calculate the future value of this principal in 18 years if interest is compounded continuously. \_\_\_\_\_
- Evaluate;  $5^{2e}$  \_\_\_\_\_,  $(\frac{1}{2})^{-4}$  \_\_\_\_\_,  $11e^{\sqrt{3}}$  \_\_\_\_\_
- Find the domain of  $f(x) = 2^x$  \_\_\_\_\_, find the domain of  $g(x) = (\frac{1}{2})^x$  \_\_\_\_\_
- Find the range of  $f(x) = 2^x$  \_\_\_\_\_, find the range of  $g(x) = (\frac{1}{2})^x$  \_\_\_\_\_
- Find the y-intercept of  $f(x) = 2^x$  \_\_\_\_\_, find the y-intercept of  $g(x) = (\frac{1}{2})^x$  \_\_\_\_\_
- Evaluate :  $\frac{300}{1 + e^{-2}}$  \_\_\_\_\_,  $50e^{-.0125 \times 2}$  \_\_\_\_\_
- Certain population increases according to the model  $P(t) = 250e^{0.47t}$ . Use the model to determine the population when  $t = 10$  \_\_\_\_\_,  $t = 15$  \_\_\_\_\_, and  $t = 30$  \_\_\_\_\_.
- A particular radioactive substance has a half-life of 30 days. How much of an initial sample of 100 grams will remain after 10 days \_\_\_\_\_, 50 days \_\_\_\_\_, and 100 days \_\_\_\_\_?
- Assume the doubling time of the population of Monticello is 60 years. If the present population is 10000, what will be the population of Monticello in  
a) 10 years \_\_\_\_\_                      b) 50 years \_\_\_\_\_                      c) 100 years \_\_\_\_\_