NAME: _____

UNIT 3 • LINEAR AND EXPONENTIAL FUNCTIONS
Lesson 4: Analyzing Linear and Exponential Functions

Practice 3.4.2: Graphing Exponential Functions

Use what you know about exponential functions to complete the problems that follow.

1. Given the function $f(x) = 3(2)^x + 4$, identify the y-intercept and describe the end behavior.

2. Given the function $f(x) = 5\left(\dfrac{1}{4}\right)^x - 4$, identify the y-intercept and describe the end behavior.

3. Given the function $f(x) = 4(2)^x - 6$, identify the y-intercept and describe the end behavior.

4. Given the function $f(x) = 7\left(\dfrac{1}{3}\right)^x + 2$, identify the y-intercept and describe the end behavior.

5. Given the function $f(x) = 2\left(\dfrac{1}{4}\right)^x - 3$, identify the y-intercept and describe the end behavior.

6. Given the function $f(x) = \dfrac{1}{4}(2^x) + 1$, identify the y-intercept and describe the end behavior.

7. A certain radioactive isotope has a half-life of 6 hours. The starting amount is 100 grams. Write an exponential function to model this scenario. How much of the isotope remains after 12 hours?

continued

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8. You are growing bacteria for a science experiment. The number of organisms triples every 10 hours. You begin the experiment with 20 organisms. Write an exponential function to model this scenario. How many organisms will you have in 30 hours?

9. Violet invests $400 in an account that earns 2.5% interest per year. Write an exponential function to represent this scenario. How much money is in the account after 7 years?

10. The graph of a function is shown below. Write a scenario that could be represented by the graph.