

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## UNIT 4 • MODELING AND ANALYZING EXPONENTIAL FUNCTIONS

### Lesson 2: Domain and Range of Exponential Functions

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#### Problem-Based Task 4.2.1: Pine Trees upon the Highland

#### Coaching

- a. What does  $f(x)$  represent?
- b. What does  $g(x)$  represent?
- c. What is the domain of  $f(x)$  and  $g(x)$ ?
- d. What is the range of  $f(x)$ ?
- e. What is the range of  $g(x)$ ?
- f. What is the shortest a 400-year-old tree could be?
- g. Which trees could be more than 400 years old?
- h. Which tree do you think is oldest?
- i. What is the tallest a tree could be after 400, 500, 600, 700, and 800 years?
- j. How old is the oldest tree?