

Name \_\_\_\_\_ Date \_\_\_\_\_

**Well, Maybe It *Is* a Function!**  
**Sequences and Functions**

1. Rakesha claims that the equation  $f(n) = 5n - 7$  is the function notation for the sequence that is represented by the explicit formula  $a_n = -2 + 5(n - 1)$ . Jin doesn't understand how this can be the case.
  - a. Help Jin understand by listing the steps for how to write the explicit formula for the given sequence in function notation. Provide a rationale for each step.

- b. Describe the graph of this function. Explain your reasoning.

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2. Analyze the geometric sequence represented by the explicit formula  $g_n = 12 \cdot 3^{n-1}$ .
  - a. Write the explicit formula for the given sequence in function notation. Provide a rationale for each step.

- b. Describe the graph of this function. Explain your reasoning.

3. Use the geometric sequence below to answer the questions.

$$g_n = -\frac{3}{20} \cdot \left(-\frac{1}{5}\right)^{n-1}$$

- a. Cassandra claims that the function notation for this sequence is  $f(n) = \frac{3}{4} \cdot \left(-\frac{1}{5}\right)^n$ . Abe claims that the function notation for this sequence is  $f(n) = \frac{3}{100} \cdot \left(-\frac{1}{5}\right)^n$ . Who is correct? What mistake(s) did the other student make? Support your answer with your work.



- b. Describe the graph of this function. Explain your reasoning.