ACTIVITY 4 Continued

Check Your Understanding
Debrief students' answers to these items to ensure that they understand concepts related to step functions and absolute value functions.

Answers
10. The absolute value function can be defined using different rules for 2 nonoverlapping intervals of its domain. For the interval $x < 0$, $f(x) = -x$. For the interval $x \geq 0$, $f(x) = x$.

11. The rules that define a step function are all constant functions.

12. Sample answer: Two equations must be solved, representing the two intervals of the domain.

ASSESS
Students' answers to Lesson Practice problems will provide you with a formative assessment of their understanding of the lesson concepts and their ability to apply their learning.

See the Activity Practice for additional problems for this lesson. You may assign the problems here or use them as a culmination for the activity.

LESSON 4-2 PRACTICE

13. a. Graph this step function.

b. Find $g(2.4), g(0.13)$, and $g(-8.7)$.

14. A step function known as the ceiling function, written $g(x) = \lceil x \rceil$, yields the value $g(x)$ that is the least integer greater than or equal to $x$.

a. Graph this step function.

b. Find $g(2.4), g(0.13)$, and $g(-8.7)$.

Make sense of problems and persevere in solving them. A day ticket for a ski lift costs $25 for children at least 6 years old and less than 13 years old. A day ticket for students at least 13 years old and less than 19 years old costs $45. A day ticket for adults at least 19 years old costs $60. Use this information for Items 14 and 15.

14. Write the equation of a step function $f(x)$ that can be used to determine the cost in dollars of a day ticket for the ski lift for a person who is $x$ years old.

15. Graph the step function you wrote in Item 14.

Use the absolute value function $h(x) = |x - 2|$ Items 16 - 19.

16. Graph the absolute value function.

17. What are the domain and range of the function?

18. What are the coordinates of the vertex of the function's graph?

19. Write the equation for the function using piecewise notation.

10. Construct viable arguments. Explain why the absolute value function $f(x) = |x|$ is a piecewise-defined function.

11. How is a step function different from other types of piecewise-defined functions?

12. How does the definition of absolute value as a piecewise-defined function relate to the method of solving absolute value equations?