Lesson 3-3: Compare Linear and Nonlinear Functions

1. Sample answer: You can compare two functions by looking at the properties of the functions, such as initial value and rate of change.

2. Sample answer: You know that Anne's speed is 6 mi/hr. Find John's speed using two ordered pairs from the table. Then compare the two speeds. John's speed is 7 mi/hr, so John is running faster.

3. Sample answer: Anne starts at mile marker 4. From the table of values, I know that John starts at mile marker 1 (0,1).

4. Felipe's musical instrument costs more; Sample answer: Felipe's musical instrument costs $290 and Samantha's costs $240. The cost of the musical instrument is the initial value.

5. Felipe will pay more; Sample answer: He will pay $30 each month compared to $24 that Samantha will pay. The monthly payments are the constant rate of change.

6. Function B

7. Function A

8. Function A is nonlinear. Function B is linear.

9. Function A is nonlinear. Function B is linear.

10. Function I is linear. Function II is nonlinear.

11. Linear; Sample answer: The function is linear because there is a constant rate of change.

12. Sample answer: Player A earns more points than Player B for each additional correct answer.

13. Sample answer: The initial value for Athlete A is greater. This means that Athlete A was able to do more push-ups than Athlete B when the training started.

14. The function in the table has the greatest rate of change. The function in the graph has the least rate of change; Sample answer: The slope of the function in the table is 5, the slope of the equation is 4, and the slope of the graph is -2.

15. Grapes; Sample answer: The constant rate of change for the grape function is -12, which means students ate 12 grapes per minute. The constant rate of change for the carrot function is -9, which means students ate 9 carrots per minute. The students ate the grapes at a faster rate.

16. B, C, E