

Functions and Function Notation

Vending Machines

ACTIVITY 5

continued

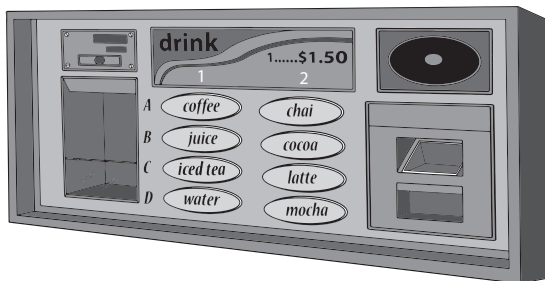
ACTIVITY 5 PRACTICE

Write your answers on notebook paper.

Show your work.

Lesson 5-1

Use the Beverage Vending Machine to answer Items 1–6.



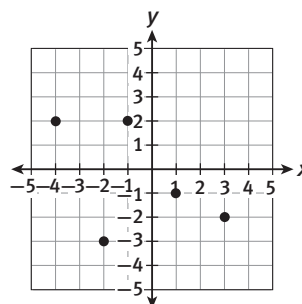
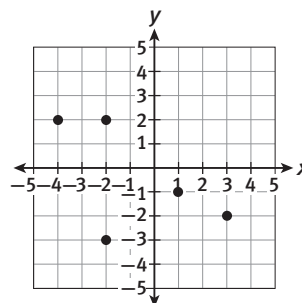
- List all of the possible inputs.
- List all of the possible outputs.
- Which output results from an input of 2C?
 - Juice
 - Iced tea
 - Latte
 - Cocoa
- Which number/letter combination would you input if you wanted the machine to output juice?
 - 2A
 - 1B
 - 2B
 - 1D
- In a mapping of the relation shown by the vending machine, what drink would 1D map to?
- In a table of the relation shown by the vending machine, what number/letter combination would correspond to cocoa?

For Items 7–9, two relations are given. One relation is a function and one is not. Identify each and explain.

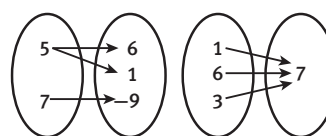
7. $\{(5, -2), (-2, 5), (2, -5), (-5, 2)\}$

$\{(5, -2), (-2, 5), (5, 2), (-5, 2)\}$

8.



9.



10. What value(s) of x in the relation below would create a set of ordered pairs that is not a function? Justify your answer.

$\{(0, 5) (1, 5) (2, 6) (x, 7)\}$

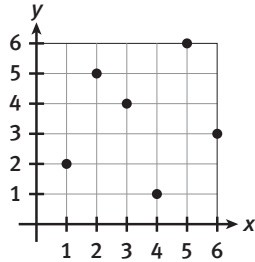
ACTIVITY 5

continued

Functions and Function Notation

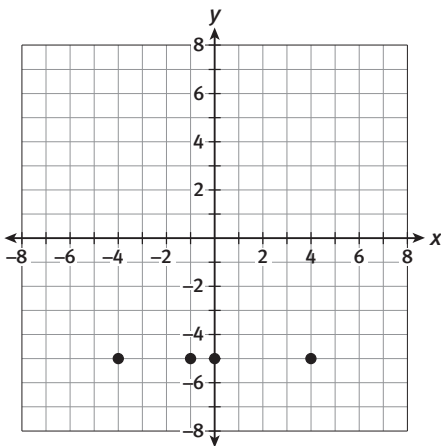
Vending Machines

11. Does the graph shown represent a function? Explain.



Lesson 5-2

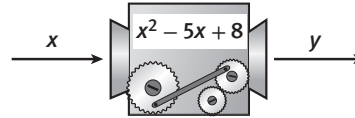
Use the graph for Items 12–14.



12. Identify the domain of the relation represented in the graph.
13. Identify the range of the relation represented in the graph.
14. Does the relation shown in the graph represent a function? Explain.

Lesson 5-3

Use the function machine for Items 15–17.



15. How would you write the function shown in the function machine in function notation?
16. What is the value of $f(-2)$?
17. What value(s) of x results in $f(x) = 8$?
18. Given the function $f(x) = -2x - 5$, determine the value of $f(-3)$.

The first seven numbers in the Fibonacci sequence are: 0, 1, 1, 2, 3, 5, 8. Use this information for Items 19 and 20.

19. What is $f(2)$?
20. What is $f(6)$?

MATHEMATICAL PRACTICES

Construct Viable Arguments and Critique the Reasoning of Others

21. Dora said that the mapping diagram below does not represent a function because each value in the domain is paired with the same value in the range. Explain the error in Dora's reasoning.

