Name _____ Class _____ Date _____

4-6 Practice

Form K

Formalizing Relations and Functions

Identify the domain and range of each relation. Use a mapping diagram to determine whether the relation is a function.

1. {(2, 4), (8, 11), (9, 1), (4, 2)}

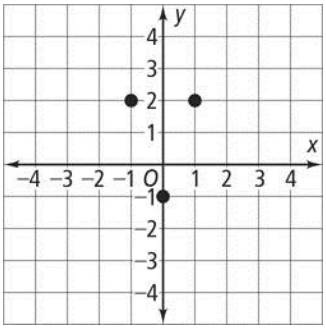
2. {(5, 2.2), (3, 2.6), (1, 2.6), (0, 2.5)}

3. {(–4, –6), (1, –2), (–4, 4), (–1, 2)}

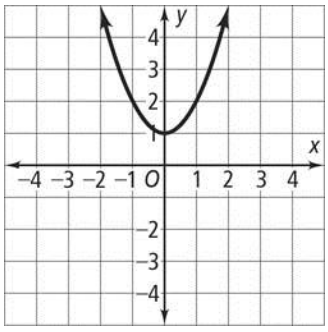
4. {(6, 5), (5, 6), (2, 2), (2, 6)}

Use the vertical line test to determine whether the relation is a function.

5.



6.



Name _____ Class _____ Date _____

4-6 Practice (continued)

Form K

Formalizing Relations and Functions

Find the range of each function for the given domain.

7. $f(x) = -4x + 3$; $\{-1, 0, 1, 2, 3\}$

8. $f(x) = x^3 + 1$; $\{-2, -1, 0, 1, 2\}$

9. $f(x) = x - 6$; $\{-5, -3, -1, 1, 3\}$

10. $f(x) = x^2 - 2$; $\{-4, -2, 0, 1, 3\}$

11. A tenth grade class is selling granola bars for a fundraiser. They earn \$0.75 for every granola bar that they sell. They have ordered 300 granola bars for the sale. The function $P(b) = 0.75b$ represents the profit P the class earns for each bar b they sell. Find a reasonable domain and range for the function.

12. The function $t(x) = 150x$ represents the number of words $t(x)$ you can speak in x minutes. How many words can you speak in 20 minutes?

13. Reasoning If $f(x) = x^2 - 15$ and $f(a) = 49$, what is the value of a? Explain.

14. Open-Ended What is a value of x that makes the relation $\{(3, 5), (2, 5), (9, x)\}$ a function?