3.1 Exercises

Dynamic Solutions available at *BigIdeasMath.com*

Vocabulary and Core Concept Check

1. **WRITING** How are independent variables and dependent variables different?

2. **DIFFERENT WORDS, SAME QUESTION** Which is different? Find "both" answers.

Find the range of the function represented by the table.

Find the inputs of the function represented by the table.

x	-1	0	1
y	7	5	-1

Find the x-values of the function represented by $(-1, 7)$, $(0, 5)$, and $(1, -1)$.

Find the domain of the function represented by $(-1, 7)$, $(0, 5)$, and $(1, -1)$.

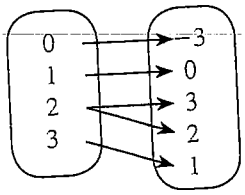
Monitoring Progress and Modeling with Mathematics

In Exercises 3–8, determine whether the relation is a function. Explain. *(See Example 1.)*

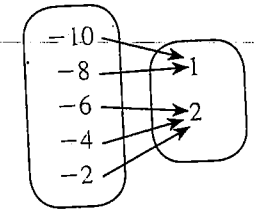
3. $(1, -2)$, $(2, 1)$, $(3, 6)$, $(4, 13)$, $(5, 22)$

4. $(7, 4)$, $(5, -1)$, $(3, -8)$, $(1, -5)$, $(3, 6)$

5. Input, x Output, y



6. Input, x Output, y



7.

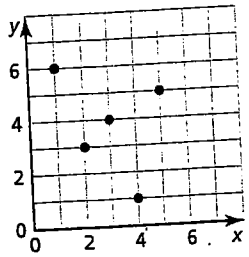
Input, x	16	1	0	1	16
Output, y	-2	-1	0	1	2

8.

Input, x	-3	0	3	6	9
Output, y	11	5	-1	-7	-13

In Exercises 9–12, determine whether the graph represents a function. Explain. *(See Example 2.)*

9.



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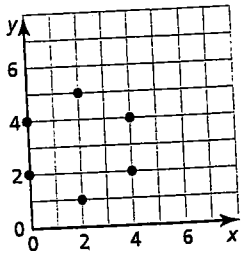

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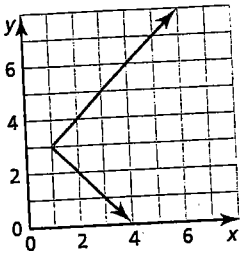

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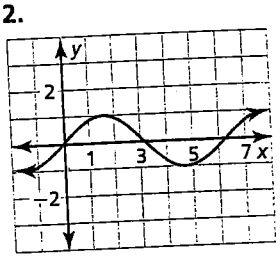
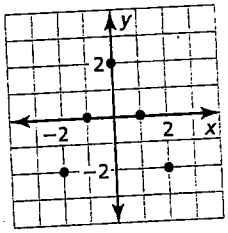


In Exercises 13–16, find the domain and range of the function represented by the graph. *(See Example 3.)*

13.



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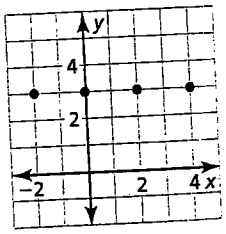

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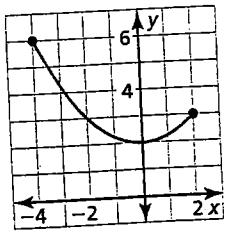

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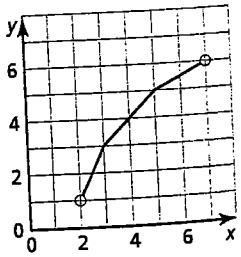

17. **MODELING WITH MATHEMATICS** The function $y = 25x + 500$ represents your monthly rent y (in dollars) when you pay x days late. *(See Example 4.)*

   a. Identify the independent and dependent variables.

   b. The domain is 0, 1, 2, 3, 4, and 5. What is the range?