# Review

## Chapter 4

**Lesson 4-1**   **Match each graph with its related table.**

**1.**
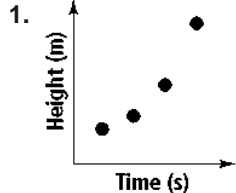


**A.**

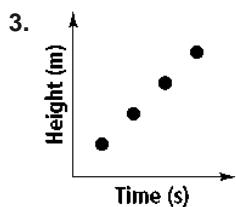| Time (s) | Height (m) |
|----------|-----------|
| 1 | 5 |
| 2 | 10 |
| 3 | 15 |
| 4 | 20 |

**2.**
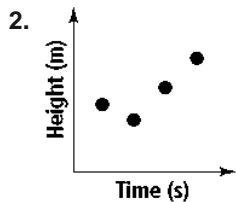


**B.**

| Time (s) | Height (m) |
|----------|-----------|
| 1 | 2 |
| 2 | 3 |
| 3 | 5 |
| 4 | 9 |

**3.**



**C.**

| Time (s) | Height (m) |
|----------|-----------|
| 1 | 4 |
| 2 | 3 |
| 3 | 5 |
| 4 | 7 |

**Sketch a graph to describe each situation.   Label each section of the graph.**
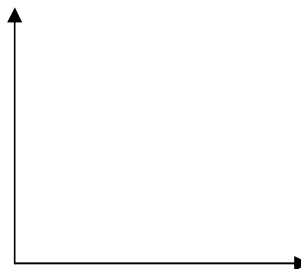
**4.** the number of apples on a tree over one year
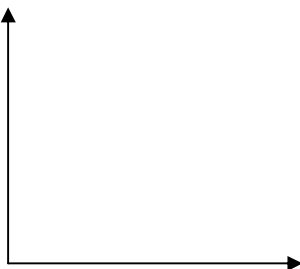
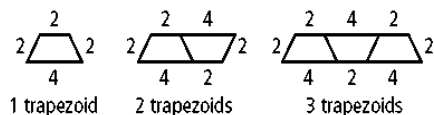**5.** the amount of milk in your bowl as you eat cereal
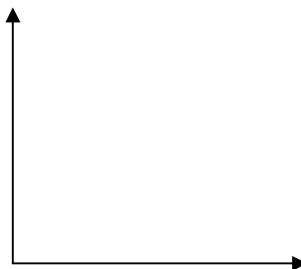
**6.** your distance from home plate during your home run

**Lesson 4-2**

**7.** For the diagram below, find the relationship between the number of shapes and the perimeter of the figure they form. Represent this relationship using a table and an equation.



1 trapezoid    2 trapezoids    3 trapezoids

| Trapezoids | 1 | 2 | 3 | 4 | 5 | 6 | 10 | ▪ | $n$ |
|------------|---|---|---|---|---|---|----|----|-----|
| Perimeter | 10 | 16 | ▪ | ▪ | ▪ | ▪ | ▪ | 112 | ▪ |

**Represent each relationship using an equation.**

8.

| x | y |
|---|---|
| 1 | 8 |
| 2 | 6 |
| 3 | 4 |
| 4 | 2 |

9.

| x | y |
|---|---|
| 0 | 1 |
| 1 | 4 |
| 2 | 16 |
| 3 | 64 |

10.

| x | y |
|---|---|
| 2 | 4 |
| 3 | 9 |
| 4 | 16 |
| 5 | 25 |

## Lesson 4-3

**Tell whether the function is *linear* or *nonlinear*.**

11.

| x | y |
|---|---|
| 0 | -2 |
| 1 | 1 |
| 2 | 4 |
| 3 | 7 |
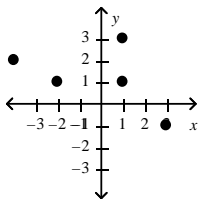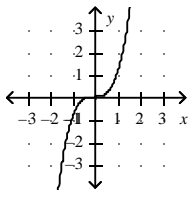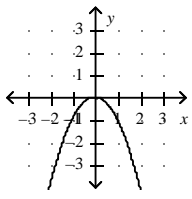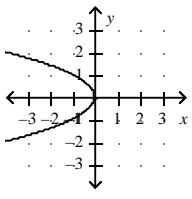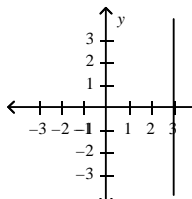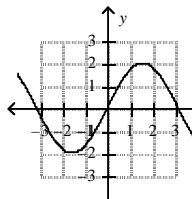
12.

| x | y |
|---|---|
| 0 | -1 |
| 1 | -1 |
| 2 | -1 |
| 3 | -1 |

13.

| x | y |
|---|---|
| 0 | 0 |
| 1 | -1 |
| 2 | 3 |
| 3 | 5 |

**14.** Determine whether each relation is a function. **Write yes or no for each.**
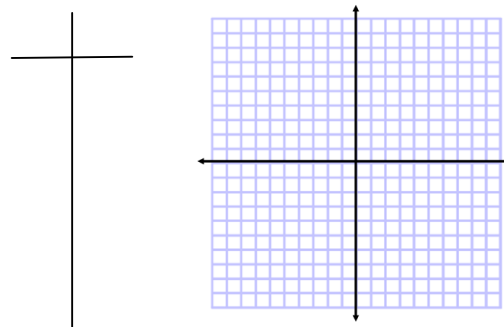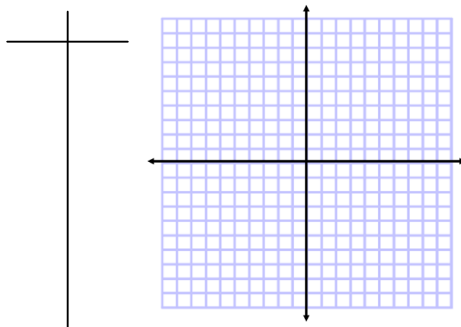


## Lesson 4-4

**Graph each function (equation) by making a table.**

**15.** $y = |2x| + 1$

**16.** $y = x^2 - 2$

## Lesson 4-5

**Write a function (equation) rule that represents each sentence.**

**17.** $y$ is 4 more than the product of 7 and $x$

**18.** $y$ is 11 less than $\dfrac{1}{3}$ of $x$

**19.** 6.5 more than the quotient of $x$ and 4 is $y$

**Write a function rule for each situation in function notation.**

**20.** the area of a 100-yard-long field $A(w)$ when you know the width $w$

**21.** the distance run in feet $D(m)$ when you know the distance in miles $m$ (5280ft = 1mi)

**22.** Sammy has \$180 in her savings account and plans to deposit \$20 each month.

| Write the function: | Define Independent Variable: | Define Dependent Variable: | Is it *continuous* or *discrete*? |
|---|---|---|---|
| | ___ = _____ | ___ =_____ | |

## Lesson 4-6

**Find the range (y-values) of each function when the domain is {–4, –1, 0, 3} (x-values).**

**23.** $f(x) = 6x - 5$

**24.** $f(x) = |x| - 2$

**Use a mapping diagram to determine whether each relation is a function.**

**25.** $\{(1, 2), (2, 3), (3, 4), (4, 5), (5, 6)\}$

**26.** $\{(5, 2), (1, 3), (4, 7), (5, 6), (0, 4)\}$

**Evaluate each function rule to find the following x-values {1, 4, 9}.**

**27.** The function $f(x) = 20 - x$ represents the amount of change you receive after paying for an item that costs $x$ dollars with a \$20 bill.

**28.** The function $f(x) = x^2$ represents the area of a square with a side length of $x$.

**Find a reasonable domain and range for the function.**

**29.** Consider the relation: {(4, 9), (6, 13), (4, 0), (–5, –9)}.  State the domain and range.

D: _____          R: _____

Is the relation a function? Explain.

_____

30.  A fruit punch recipe calls for 5 ounces of pineapple juice in every quart ($q$)of punch.
The function $p(q) = 5q$ represents the amount of pineapple juice $p(q)$, in ounces, needed to
make $q$ quarts of fruit punch. You have a large punch bowl that can hold 8 quarts.


Know these Words:
Domain                          Range
Input                           Output
Independent                     Dependent
Function                        Relation
Linear                          Non-Linear
Mapping Diagram                 Vertical Line Test