4.1 Domain and Range of a Function
For use with Activity 4.1

Essential Question How can you find the domain and range of a function?

1 ACTIVITY: The Domain and Range of a Function

Work with a partner. The table shows the number of adult and child tickets sold for a school concert.

Input →

Output →

Number of Adult Tickets, x	0	1	2	3	4
Number of Child Tickets, y	8	6	4	2	0

The variables x and y are related by the linear equation $4x + 2y = 16$.

a. Write the equation in **function form** by solving for y.

b. The **domain** of a function is the set of all input values. Find the domain of the function represented by the table.

Domain = _____

Why is $x = 5$ not in the domain of the function?

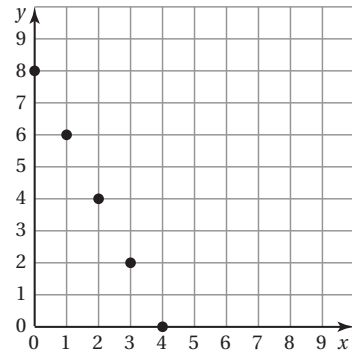Why is $x = \dfrac{1}{2}$ not in the domain of the function?

c. The **range** of a function is the set of all output values. Find the range of the function represented by the table.

Range = _____

4.1 **Domain and Range of a Function** (continued)

d. Functions can be described in many ways.

- by an equation
- by an input-output table
- in words
- by a graph
- as a set of ordered pairs

Use the graph to write the function as a set of ordered pairs.

2 ACTIVITY: Finding Domains and Ranges
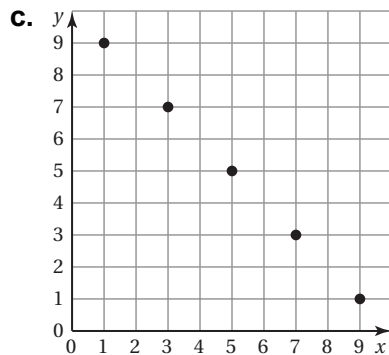
Work with a partner.

- **Complete each input-output table.**
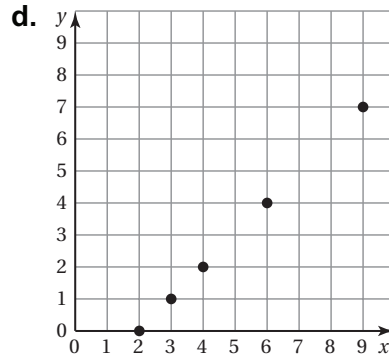- **Find the domain and range of each function represented by the table.**

a. $y = -3x + 4$

x	−2	−1	0	1	2
y					

b. $y = \dfrac{1}{2}x - 6$

x	0	1	2	3	4
y					

c.

x					
y					

d.

x					
y					

4.1 **Domain and Range of a Function** (continued)

What Is Your Answer?

3. **IN YOUR OWN WORDS** How can you find the domain and range of a function?

4. **The following are general rules for finding a person's foot length.**

   To find the length y (in inches) of a woman's foot, divide her shoe size x by 3 and add 7.

   To find the length y (in inches) of a man's foot, divide his shoe size x by 3 and add 7.3.

   a. Write an equation for one of the statements.

   b. Make an input-output table for the function in part (a). Use shoe sizes $5\frac{1}{2}$ to 12.

   c. Label the domain and range of the function represented by the table.