

Lesson 6

Connect

NOTES:

We can represent the function that associates every whole number with its double in several ways

Table of Values

| Whole Number, x | Double the Number, y |
|-------------------|------------------------|
| 0 | 0 |
| 1 | 2 |
| 2 | 4 |
| 3 | 6 |
| 4 | 8 |

a) What is the rate of change?

$$\frac{\Delta y}{\Delta x} = \frac{2}{1} = 2 = m$$

b) What is the constant?

Is the y value when $x = 0$
Constant = 0

b) What is the equation of the line?

$$y = mx + b \quad \left(\begin{array}{l} y = 2x \\ y = 2x + 0 \end{array} \right)$$

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Connect

NOTES:

We can represent the function that associates every whole number with its double in several ways

$$\{0 \leq x \leq 4\}$$

d) What is the domain?

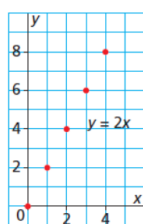
$$\{0, 1, 2, 3, 4\}$$

e) What is the range?

$$\{0, 2, 4, 6, 8\}$$

$$\{0 \leq y \leq 8\}$$

Using a graph



Connect

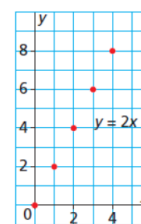
NOTES:

We know the relation $y = 2x$ is a function because each value of x associates with exactly one value of y , and each ordered pair has a different first element.

The domain of a function is the set of values of the independent variable; for the graph, the domain is the x -values.

The range of a function is the set of values of the dependent variable; for the graph, the domain is the y -values.

Using a graph



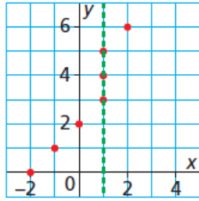
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Connect

NOTES:

A relation that is not a function has two or more ordered pairs with the same first coordinate. So, when the ordered pairs of the relation are plotted on a grid, a vertical line can be drawn to pass through more than one point.

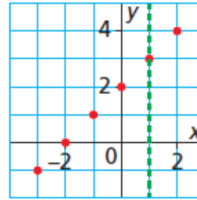


NOT A FUNCTION
because more than one dot (ordered pair) at the same x-value

Connect

NOTES:

A function has ordered pairs with different first coordinates. So, when the ordered pairs of the function are plotted on a grid, any vertical line can be drawn will always pass through no more than one point



IS A FUNCTION
because only one dot (ordered pair) for each x-value

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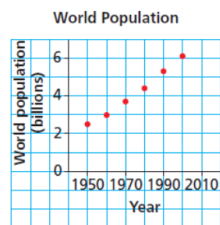
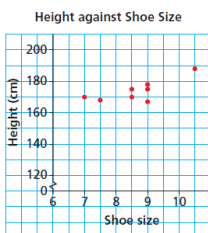
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Practice

EXAMPLE 1

Identify whether a Graph represents a function

Which of these graphs represents a function?

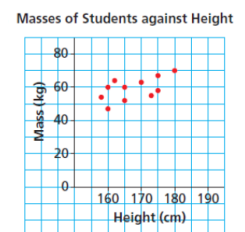
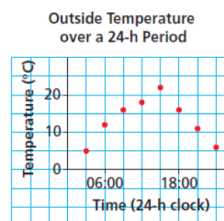


Practice

YOU TRY!

Identify whether a Graph represents a function

Which of these graphs represents a function?



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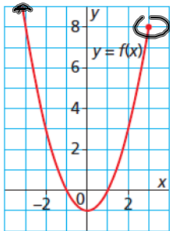
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Practice

EXAMPLE 2

Determining the Domain and Range of the Graph of a function

Determine the domain and range of the graph of each function?



$$\text{Domain} = \{x \leq 3\}$$

$$\text{Range} = \{y \geq -1\}$$

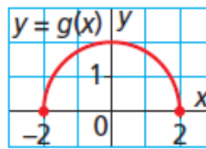
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Practice

EXAMPLE 2

Determining the Domain and Range of the Graph of a function

Determine the domain and range of the graph of each function?



$$\text{Domain} = \{-2 \leq x \leq 2\}$$

$$\text{Range} = \{0 \leq y \leq 2\}$$

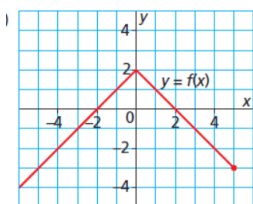
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Practice

YOU TRY!

Determining the Domain and Range of the Graph of a function

Determine the domain and range of the graph of each function?



$$\text{Domain} = \{x \leq 5\}$$

$$\text{Range} = \{y \leq 2\}$$

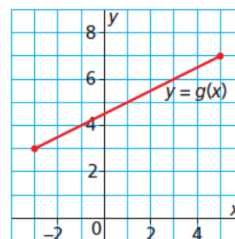
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Practice

YOU TRY!

Determining the Domain and Range of the Graph of a function

Determine the domain and range of the graph of each function?



$$\text{Domain} = \{-3 \leq x \leq 5\}$$

$$\text{Range} = \{3 \leq y \leq 7\}$$

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Practice

HOMEWORK!

Textbook Questions:

Page 294 # 4, 5, 6, 7, 8, 9

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