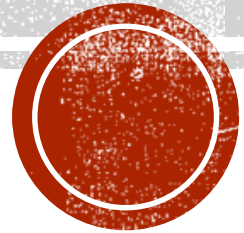
DOMAIN AND RANGE



INDEPENDENT AND DEPENDENT VARIABLES

- An independent variable is a variable (x) whose variation does not depend on that of another.

- A dependent variable is a variable (y) whose value depends on that of another.

EXAMPLES

- *Identify the independent and dependent variables for each function*.

- The distance a person runs increases with time.

- As the dimensions of a square decrease, so does the area.

EXAMPLES

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- Ind: time
- Dep: distance
- As the dimensions of a square decrease, so does the area.
- Ind: dimensions
- Dep: area

EXAMPLES

- *Identify the independent and dependent variables for each function*.

- In general, the price of gas increases throughout the year.

- Art club members are drawing caricatures of students to raise money for their trip to New York City. The profit that they make increases as the price of their drawings increases.

EXAMPLES

- *Identify the independent and dependent variables for each function*.

- In general, the price of gas increases throughout the year.
- Ind: year
- Dep: price of gas
- Art club members are drawing caricatures of students to raise money for their trip to New York City. The profit that they make increases as the price of their drawings increases.
- Ind: price of drawings
- Dep: profit

DOMAIN AND RANGE

- Domain is the set of all values of the independent variable.

- The range is the set of all values of the dependent variable.

EXAMPLES

- *Find the domain and range.*

- For every two pairs of earrings you buy at the regular price of $29 each, you get a third pair free.

Pairs of Earrings	1	2	3	4	5
Total Cost ($)	29	58	58	87	116

EXAMPLES

- *Find the domain and range.*

- Since the total cost depends on how many earrings bought, the earrings are the independent variable and the total cost is the dependent variable.

Pairs of Earrings	1	2	3	4	5
Total Cost ($)	29	58	58	87	116

EXAMPLES

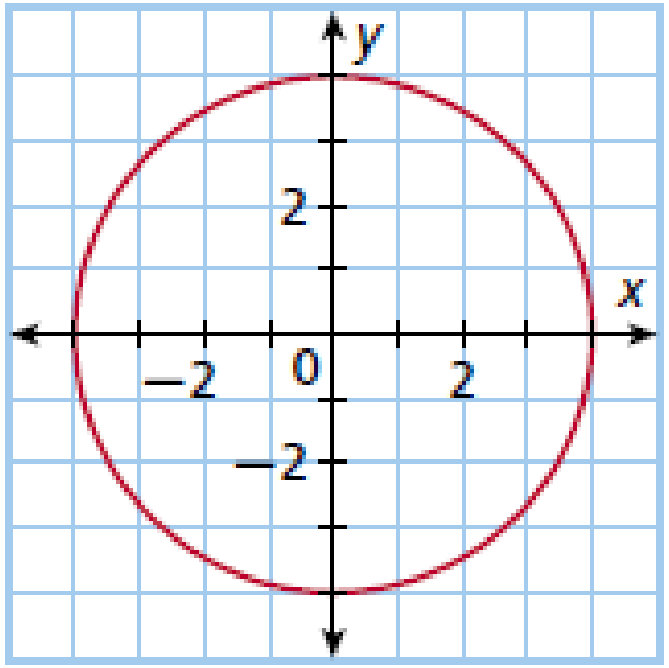
- *Find the domain and range.*

- Domain: (1, 2, 3, 4, 5)
- Range: (29, 58, 58, 87, 116, 116)

Pairs of Earrings	1	2	3	4	5
Total Cost ($)	29	58	58	87	116

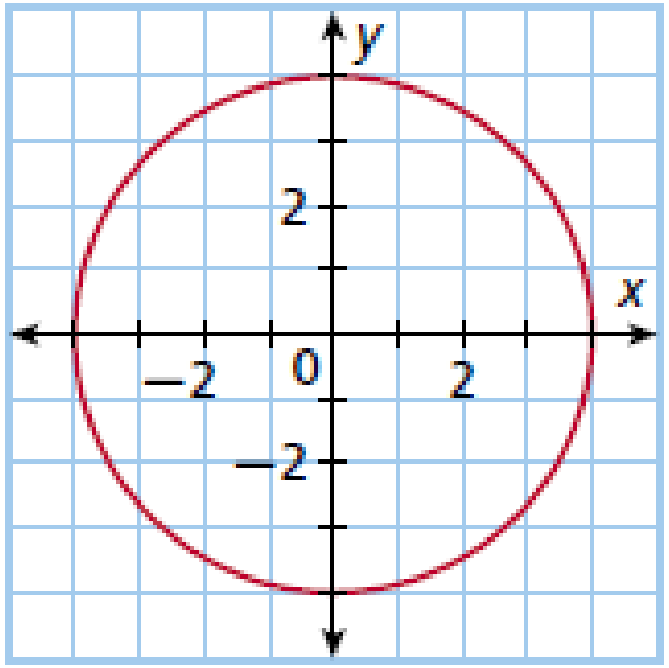
EXAMPLES

- *Find the domain and range.*



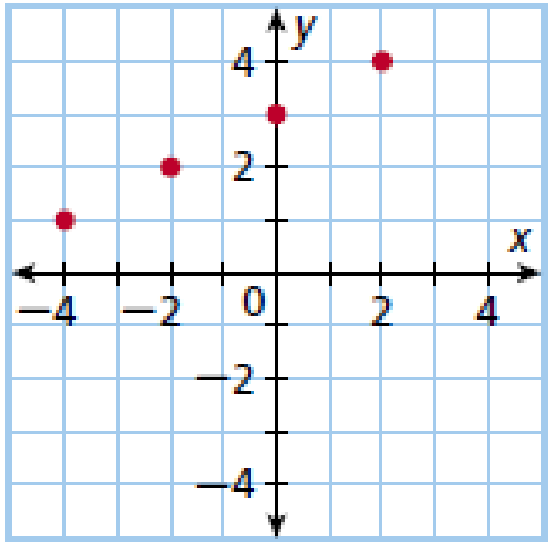
EXAMPLES

- *Find the domain and range.*
- D: $-4 \leq x \leq 4$
- R: $-4 \leq x \leq 4$



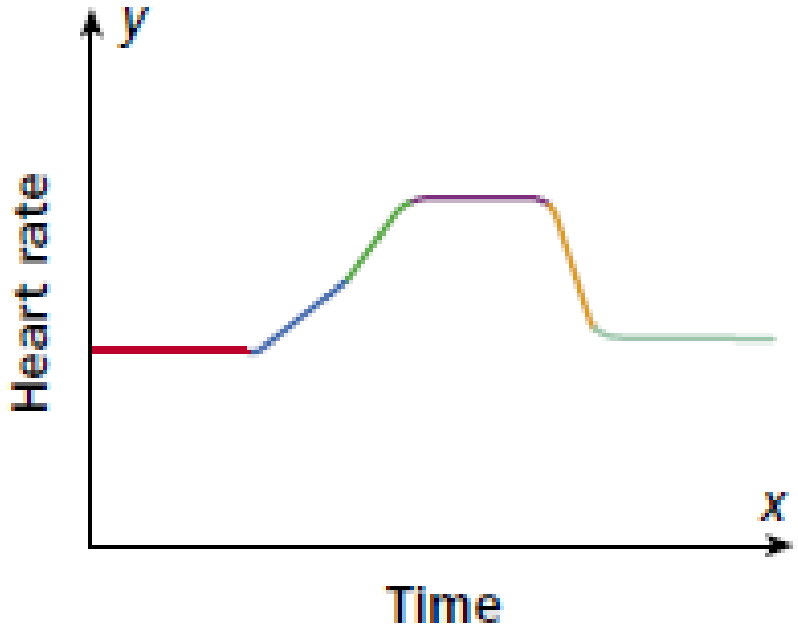
TYPES OF FUNCTIONS

- Discrete function – a function that has a graph where the points are not connected.
- It usually has things that can be counted (cars, people, desks)



TYPES OF FUNCTIONS

- Continuous function – a function that has a graph with a line or a smooth curve
- It usually has things that can be measured (time, distance, speed)



EXAMPLES

- Maxine is buying extra pages for her photo album. Each page holds exactly 8 photos. Think about the maximum number of photos she can add to her album if she buys 1, 2, 3, or 4 extra pages. Tell whether the graph is continuous or discrete.

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- It is discrete because the photos can be counted.

EXAMPLES

- For six months, a puppy gained weight at a steady rate. Tell whether the graph is continuous or discrete.

EXAMPLES

- For six months, a puppy gained weight at a steady rate. Tell whether the graph is continuous or discrete.

- The graph is continuous because weight is measured.