

Math 1201: Functions and Relations

Section 5.1: Representing Relations

Terms:

Set: A collection of Distinct Objects

Element: An object in the set.

Relation: Associates one set of elements to the elements of another. (Two sets are related)

Ways of describing a Relation:

- In Words
- Ordered Pairs
- Table of Values
- Graphs
- Equations
- Arrow Diagrams

Example 1: Show the association of fruits with their colors using a table, words, ordered pairs, and an arrow diagram.

Table of values:

<u>Fruit</u>	<u>Color</u>
Apple	Red
Apple	Green
Blueberry	Blue
Cherry	Red
Huckleberry	Blue

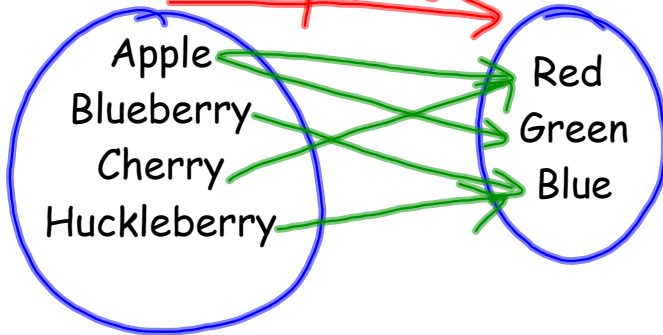
In Words:

An apple may have the color Red
 Element from 1st Set Association Element from 2nd Set

Ordered Pairs:

(apple, Red) (apple, Green) (Blueberry, blue)
 (Cherry, Red) (Huckleberry, blue)

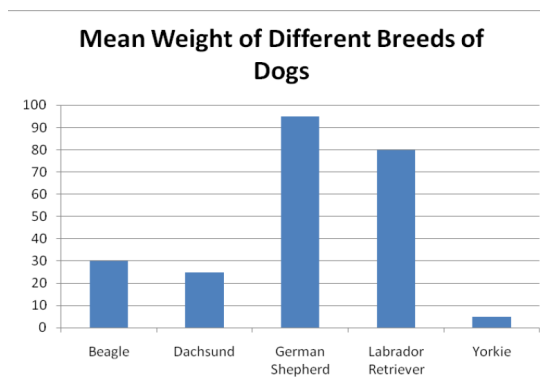
Arrow Diagram: *May have the Color*



Example 2: Different breeds of dogs can be associated with their average mass. Consider the following graph.

Represent the data in:

- Words
- A table
- An arrow diagram
- Ordered Pairs



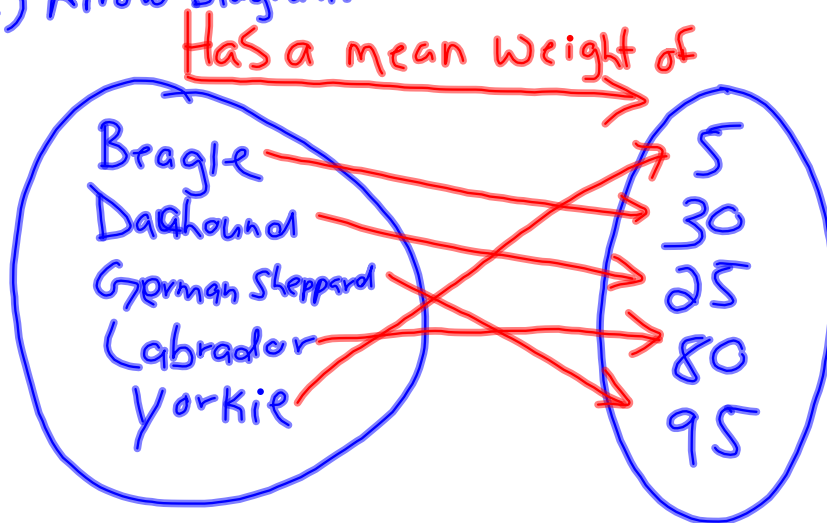
a) A Beagle has an average weight of 30lbs

Element from 1st Set
 Association
 Element from 2nd Set

b)

Breeds	Mean weight
Beagle	30
Dachhund	25
German Sheppard	95
Labrador	80
Yorkie	5

c) Arrow Diagram:



d) Ordered Pairs

(Beagle, 30) (Dachhound, 25) (German Sheppard, 95)
 (Labrador, 80) (Yorkie, 5)

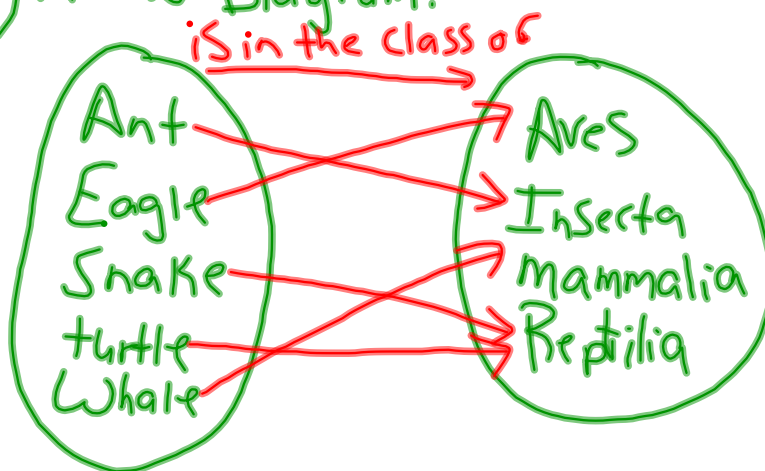
Example 3: Animals can be associated with the class they are in. Represent the data in:

- Words
- An arrow diagram
- Ordered Pairs

<u>Animal</u>	<u>Class</u>
Ant	Insecta
Eagle	Aves
Snake	Reptilia
Turtle	Reptilia
Whale	Mammalia

a) An ant is in the class of Insecta

b) Arrow Diagram:



c) Ordered Pairs

(Ant, Insecta) (Eagle, Aves) (Snake, Reptilia)
 (turtle, Reptilia) (Whale, mammalia)

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