

5.1 Representing Relations

set notation { }

- * A **set** is a collection of distinct objects
- * An **element** of a set is one object in the set
- * A **relation** associates the elements of one set with the elements of another

ex. Consider the table to the right

<u>Country</u>	<u>Continent</u>
Norway	Europe
Nepal	Asia
Morocco	Africa
Thailand	Asia
Italy	Europe
Costa Rica	N. America
Portugal	Europe

a) Describe this list in words

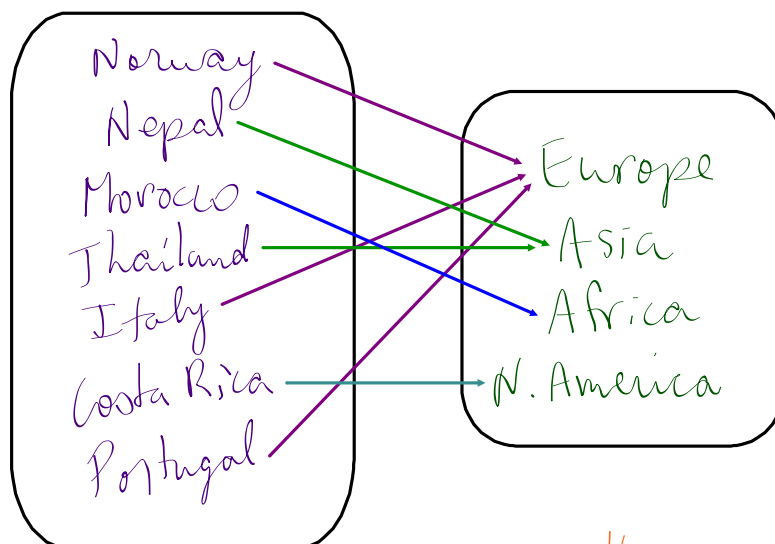
"Country" is a country in "continent"

b) Represent this relation by:

i) a set of ordered pairs

{ (Norway, Europe), (Nepal, Asia),
..., (Portugal, Europe) }

ii) an arrow diagram

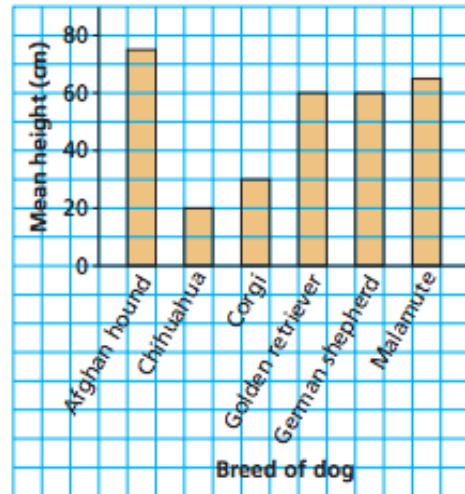


"is a country in" →

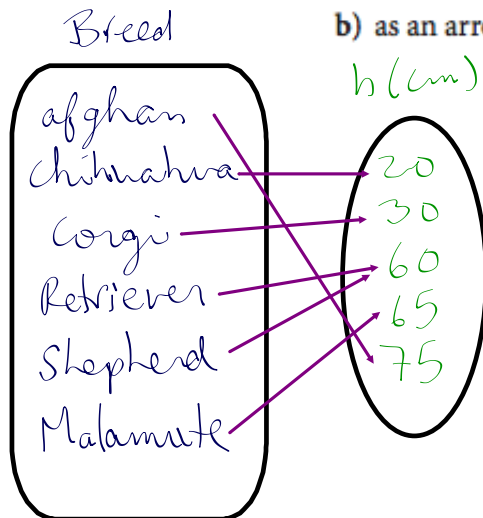
average

Different breeds of dogs can be associated with their mean heights. Consider the relation represented by this graph. Represent the relation:

Mean Heights of Different Breeds of Dogs



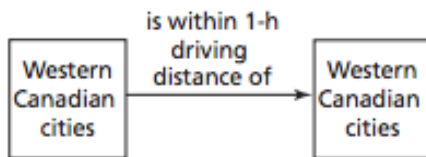
- a) as a table
- b) as an arrow diagram



Breed	Mean height (cm)
afghan	75
chihuahua	20
Corgi	30
Golden Retriever	60
German Shepherd	60
Malamute	65

"has a mean height of"

In this diagram:



Both sets in a relation can be the same.

- a) Describe the relation in words. \Rightarrow "city" is within 1 hr drive to city" in Western Canada.
- b) List 2 ordered pairs that belong to the relation.

{(Whitehorse, Carcross),
(Vancouver, Richmond)}