basket of grapes is an example of empty set.

Because in graphes basket there are no apples present.

Singleton set :

A set which contains a single element is called a single set.

Ex : There is only one apple in a basket of graphes.

Finite set :

A set which consists of a definite number of elements is called a finite set.

Ex : A set of natural numbers up to 10.

ie, $A = \{1,2,3,4,5,6,7,8,9,10\}$

Infinite sets :

A set which is not finite is called infinite set.

Ex : A set of natural numbers.

ie, $A = \{1,2,3,4,5, \dots \}$

Equivalent Set :

If the number of elements are same for two different sets, then they are called an equivalent sets. The order of sets does not matter here. It is represented as :

$$n(A) = n(B)$$

where A and B are two different sets with same number of elements.

Ex :

If $A = \{1, 2, 3, 4\}$

& $B = \{Red, Blue, green, Black\}$

In set A there are four elements and in set B also there are four elements.

Therefore set A and set B are equivalent.

Equal Sets :

The two sets A & B are said to be equal if they have exactly the same elements, order of elements.

do not matter.

Ex:

$A = \{1, 2, 3, 4\}$ and

$B = \{4, 3, 2, 1\}$

∴ $A = B$.

__Disjoint sets:__

The two sets A and B are said to be disjoint if the set does not contain any common elements.

Ex:

Set $A = \{1, 2, 3, 4\}$ and

$B = \{5, 6, 7, 8\}$

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are disjoint sets, because there is no common elements between them.

__Subsets:__

If set "A" is said to be a subset of B if every element of A is also an element of B, denoted as

$A \subseteq B$.

Even the null set is considered to be the subset of another set.

Ex:

$A = \{1, 2, 3\}$

then other subsets are:

$\{1\}, \{2\}, \{3\}, \{1, 2\},$
$\{2, 3\}, \{1, 3\}, \{1, 2, 3\}, \{\}.$

Remark:

* The set is also a subset of itself.

* If A is not a subset subset of B, then it is denoted by $A \not\subset B$.

Proper Subset:

If $A \subseteq B$ and $A \neq B$. then A is called the proper subset of B and it can be written as $A \subset B$.

Ex:

1] $A = \{2, 5, 7\}$ is a subset

a) $B = \{2, 5, 7\}$ then it is not a proper subset of B.

$B = \{2, 5, 7\}.$

But, $A = \{2, 5, 7\}$ is a subset of $B = \{2, 5, 7\}$ and is a proper subset also.