**3.1 Types of Sets and Set Notation**

**By the end of the lesson you will be able to:**

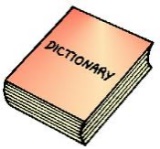


1. Understand sets and set notation



1. Use vocabulary related to sets and set notation



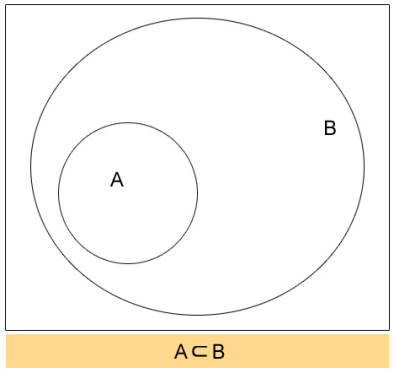
**Set** is a *\_\_\_\_\_\_\_\_\_\_\_\_* of *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* or *distinguishable objects.* Sets are defined using brackets and are usually named with a capital letter.



For example, the set of whole numbers is written as or

**Element**are the objects that make up a set. Each element is *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.*



**Universal Set** is a set of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a particular context.



For example, the universal set of digits is



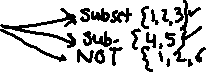
**Subset** is a set where all elements belong to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

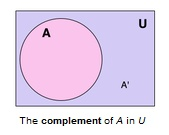


*For example, the set of odd digits is a subset of , the set of all digits.*



We write this as , where means“subset of”



**Complement** it is the set of all elements of a universal set that do not belong to a subset - is the amount you must add to something to make it "whole.”



*For example, is the complement of , a subset of the universal set of digits, . The prime (‘) tells you that a set is a complement.*



**Empty Set** is a set with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and is denoted as empty brackets or .



**Finite Set** is a set with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ number of elements.



**Infinite Set** is a set with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ number of elements.



**Disjoint** is two or more sets having \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



**Mutually Exclusive** means two or more things that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occur at the same time.



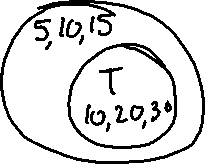
**Example 1**



Indicate the multiples of 5 and 10, from 1 to 50, using **set notation**. List any subsets.



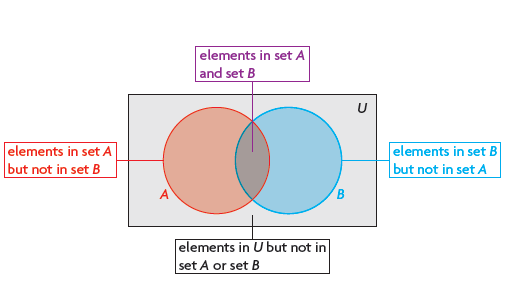
Represent the sets and subsets in a Venn diagram.



**3.2 Exploring Relationships between Sets**

**By the end of the lesson you will be able to:**

1. Explore what the different regions of a Venn diagram represent.



**Example 1**

In a high school, there are 65 Grade 12 students. Of these students 23 play basketball and 24 play volleyball. There are 31 students who don’t play either sport.

*How many students play both basketball and volleyball?* Use a Venn diagram to solve.

Assignment: P. 154 #2, 4, 9, 11, 16 and P. 160 #1-5