**Section 3.4**

**Activity 1**

Write in words how to read each of the following out loud. Then write the shorthand notation for each set.

* 1. {x ∈ U | x ∈ A and x ∈ B }
  2. {x ∈ U | x ∈ A or x ∈ B }
  3. {x ∈ U | x ∈ A and x ∉ B }
  4. {x ∈ U | x ∉ A}

**Activity 2**

Let :

A = { 1,3,5,7,9}

B = { 3,6,9 }

U = {x ∈ Z | 0<x<10 }

Find the following

* 1. A ∪ B
  2. A ∩ B
  3. A ∪ U
  4. A ∩ U
  5. A – B
  6. Ac
  7. Bc

**Activity 3**

Complete the following sentences without using the symbols ∩, ∪, and -.

* 1. x ∉ (A ∩ B) if, and only if, …
  2. x ∉ (A ∪ B) if, and only if, …
  3. x ∉ (A – B ) if, and only if, …

**Activity 4**

Consider the following sets:

* + U = set of all students at UNI
  + S = set of all students with majors in CHAS
  + C = set of all computer science majors
  + P = set of all physics majors
  + F = set of all women students at UNI

What would the Venn diagram for these sets look like?

**Activity 5**

Write an expression using the sets from activity #4 and the set operations to express the following:

* 1. The set of people majoring in either computer science or physics.
  2. The set of people majoring in both computer science and physics.
  3. The set of computer science majors who are women.
  4. The set of people who do not have a major in CHAS.
  5. The set of male students who are majoring in both computer science and physics.
  6. The set of female physics students and male computer science students.