

## CS/Math 278

### Lab8

**Due on Wednesday 10-28-2009 online by 5:00 pm**

Let A and B be subsets of the universal set  $U = \{1, 2, 3, 4, \dots, 20\}$ .

Write a program that does the following.

- 1) prompts the user to input two integer sets A and B, each of size at most 20. Each set is stored in an array.
- 2) evaluates and prints out the result of the following.
  - a) The union of A and B,  $A \cup B$ .
  - b) The intersection of A and B,  $A \cap B$ .
  - c) The difference of B minus A,  $B - A$ .
  - d) The complement of A,  $A^c$ .
  - e) Is  $A = B$ ?
  - f) Is  $A \subseteq B$ ?

**Dialog with the user may look like the following:**

*Please enter the size of A: 3*

*Please enter A: 1 2 5*

*Please enter the size of B: 4*

*Please enter B: 1 2 3 4*

*The union of A and B is: 1 2 3 4 5*

*The intersection of A and B is: 1 2*

*The difference of B minus A is: 3 4*

*The complement of A is: 3 4 6 7 8 9 10 11 12 13 14 15 16  
17 18 19 20*

*A is not equal to B*

*A is not a subset of B*

Note:

If  $A \cap B$  is empty then print out that "*the intersection of A and B is: empty*"

If  $B - A$  is empty then print out that "*the difference of B minus A is: empty*"