

## SETS REVISION

### Some Sets Facts:

- Union of a set  $A$  and its complement  $A'$  is always the universal Set  $\xi$ . ie.  $A \cup A' = \xi$
- Intersection of a set  $A$  and its complement  $A'$  is always the empty or null set. ie.  $A \cap A' = \phi$  or  $\{\}$
- The empty set is a subset of every set.  
ie.  $\{\} \subset$  every set
- $\in$  – *element of or a member of*

Choose True or False:

1. If  $M = \{1,2,3,4,5,6,7,8\}$  and  $N = \{5,7,9,11,13\}$ 
  - a)  $5 \in M$
  - b)  $11 \notin N$
  - c)  $7 \in (M \cup N)$
  - d)  $N \subset M$
  - e)  $\{5,6,7\} \subset M$
  - f)  $\{\} \subset N$
  - g)  $n(M) = 6$
  - h)  $7 \in M \cap N$
  - i)  $3 \in M \cap N$
  - j)  $\phi \notin M$

2. If  $\xi = \{1,2,3,4,5,6,7,8,9,10\}$

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

$B = \{7,8,9,10,12,14,16,18,20\}$

and  $C = \{x: x \in I, 10 \leq x < 20\}$  find:

a)  $A'$

b)  $C$

c)  $A \cap B$

d)  $A \cup B$

e)  $B \cap C$

f)  $A \cap C$

g)  $n(A \cup B)$

h)  $n(C)$

i) Is  $20 \in B$ ?

j) Is  $\{15, 17, 20, 25\} \subset C$ ?

k)  $(A \cup B) \cap C$

l) Is  $A \subset (B \cup C)$ ?