1. (d) Since, intelligency is not defined for students in a class *i.e.,* Not a well defined collection.
2. (a)  ⇒ 

 ⇒ 

There is no value of *x* which satisfies both the above equations. Thus, .

1. (c) Number of proper subsets of the set {1, 2, 3) =.
2. (a) . Hence .
3. (d) 

=  = .

1. (c) Since  meet when  ⇒ , which does not give any real value of *x*.

Hence, .

1. (b) Since, 



,



 is a multiple of 9 for .

For   = ,

For  = 

 is a multiple of 9 for all 

 *X* contains elements, which are multiples of 9, and clearly *Y* contains all multiples of 9.

 *i.e.*, .

1. (c)  = *n*[(*A* ∪ *B*)*c*] = 

= 

= 700 – [200 + 300 – 100] = 300

1. (c) *n*(*C*) = 20, *n*(*B*) = 50, *n*(*C* ∩ *B*) = 10

Now *n*(*C* ∪ *B*) = *n*(*C*) + *n*(*B*) – *n*(*C* ∩ *B*)

= 20 + 50 – 10 = 60.

1. (b) It is De' Morgan law.
2. (c) (*A* – *B*) ∪ (*B* – *A*) = (*A* ∪ *B*) – (*A* ∩ *B*).
3. (c) *B* ∪ *C* = {*c*, *d*} ∪ (*d*, *e*} = {*c*, *d*, *e*}

 *A* × (*B* ∪ *C*) = {*a*, *b*} × {*c, d, e*}

= {(*a, c*), (*a, d*), (*a, e*), (*b, c*), (*b, d*), (*b, e*)}.

1. (d) It is fundamental concept.
2. (b) Since 

∴ can be 1, [ *y* can be 1]

1. (d) Null set is the subset of all given sets.
2. (b) ,

then, total number of subsets of *S* is .

Hence, .

1. (b) Given . Hence, .
2. (c) Let , 

⇒ , 

⇒ and  ⇒ , ∴

Similarly, ⇒ , ∴

Now  ⇒ .

1. (b) , ∴.
2. (a) 

, .

∴.

1. (a) , .
2. (a) 

∴.

1. (a) , .
2. (c) , 

, (by associative law)

, 

.

1. (c) ,

[5 and 7 are relatively prime numbers].

1. (a) From *Venn-Euler's* diagram,

B–A

A–B

*A*∩*B*

U

 .

1. (c) Since .

So, .

1. (c) 



⇒ .

1. (a) Minimum value of 

.

1. (a) Let = Number of teachers in Physics.

= Number of teachers in Maths



 ⇒ .