X= the number of intersection

A-X= Is the number subtracted from set A given using intersection(x)

B-X= Is the number subtracted from set B given using intersection(B)

n(AuB)'= The same above

EX 1

A Survey was carried out on 40 travelers, 12 of the travelers said they had traveled to GHANA, but not to Cameroon before. 8 of the travelers claimed they had traveled to Cameroon, but not to GHANA before. 10 of the travelers said they had not traveled to any of the two countries before.

Draw a Venn diagram to find

i. The number of travelers that had traveled to both countries before.

ii. The number of travelers that had traveled to GHANA before.

iii. The number of travelers that had traveled to Cameroon before.

NOTE: Intersection was not given.

Let G represent GHANA & C represent CAMEROON

n(U)= 40

n(G)= 12

n(C)= 8

n(GuB)'=10

n(GnB)= ?

Formular

n(16)= n(GnC') + n(G'nC) + n(GnC) + n(GuC)'

i).40 = 12-x + 8-x + x +10

40 = 12+ 8+10- x + x -x

40 = 30 - x

40 - 30 = -x

10 = -x

x = -10

ii). n(GnC') = 12-x

= 12-(-10)

= 12 + 10

= 22

iii). n(G'nC) = 8-x

= 8-(-10)

= 8 + 10

= 18

EX 2

A games master of a school called 50 students of the school to select two teams for the school in FOOTBALL and VOLLEYBALL. 30 students could play football, while 20 students could play Volleyball.

If 8 students could play both games, find

(a) The number of students that could play football but not Volleyball.

(b) The number of students that could play volleyball but not football.

(c) The number of students that could not play any of the two games.

NOTE: Intersection is given above, Let F= football and V= volleyball

n(U)= 50

n(U)= 30

n(U)= 20

n(FnV)= 8

n(FuV)'= ?

(a) n(FnV')= 30-8

= 22

(b) n(F'nV)= 20-8

= 12

(c) n(U)= n(FnV')+ n(F'nV)+ n(FnV)+ n(FuV)'

50 = 12 + 22 + 8 + y

50 = 42 + y

50 - 42 = y

8 = y

y = 8