Answer on Question #56513 – Math – Discrete Mathematics

Question

A city has three newspapers A, B and C. Of the adult population, 1% read none of these newspapers. 36% read A, 40% read B, 52% read C, 8% read A and B, 11% read B and C, 13% read A and C and 3% read all the three newspapers. Required:

i. Illustrate the above information on a venn diagram

ii. What percent of the adult population read newspaper A only

iii. What percent of the adult population read newspaper B or Newspaper C

iv. What percent of the adult population read newspaper A or B but not C

Solution

i. Only A and B= (A and B)-(A and B and C)=8% -- 3% = 5%.

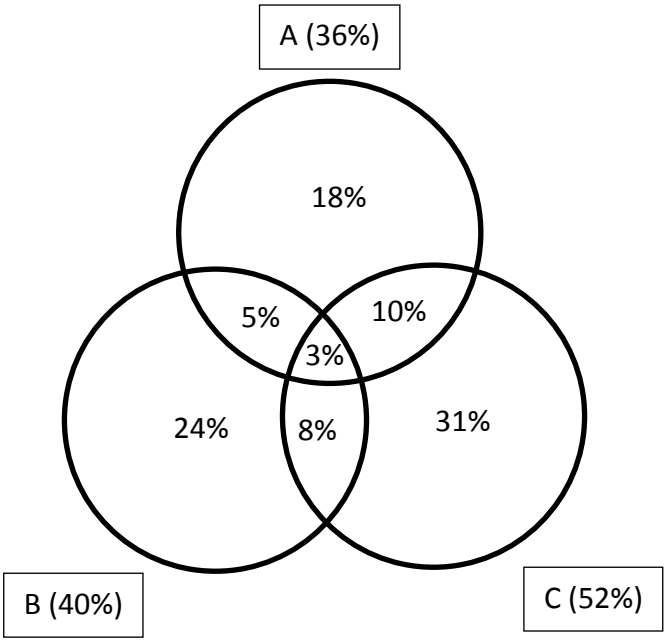
Only B and C = (B and C)-(A and B and C)=11% -- 3% = 8%.

Only A and C = (A and C)-(A and B and C)=13% -- 3% = 10%.

Only A = A-(Only A and B)-(A and B and C)-(Only A and C)=36% -- 5% -- 3% -- 10% = 18%.

Only B = B-(Only A and B)-(A and B and C)-(Only B and C)= 40% -- 5% -- 3% -- 8% = 24%.

Only C = C-(Only B and C)-(A and B and C)-(Only A and C)= 52% -- 8% -- 3% -- 10% = 31%.



ii. Only A =A-(Only A and B)-(A and B and C)-(Only A and C)=36% -- 5% -- 3% -- 10% = 18%.

iii.

Method 1

B or C= B+C-(B and C)= 40% +52%-11%= 81%

(100% -- 1%) – 18% = 81%.

Method 2

B or C= 100%- None-Only A=100% -- 1% – 18% = 81%.

iv. A or B but not C= Only B+(Only A and B)+ Only A=24% + 5% + 18% = 47%.