Level 9 - Revision Work Sheet 1- Answer key

Chapter 8

Topic Sets

1). (a) (i) False

(ii) True

(iii) False

(iv) True

(v) True

(vi) False

(vii) False

(viii) True

2) (i) **A**

= {1, 3, 4, 5}

(ii) **B**

= {4, 5, 6, 2}

(iii) **ξ**

= {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

(iv) **A'**

= {2, 6, 7, 8, 9, 10}   **all elements of universal set leaving the elements of set A.**

(v) **B'**

= {1, 3, 7, 8, 9, 10}   **all elements of universal set leaving the elements of set B.**

(vi) **C'** = To find

C = {1, 5, 6, 7, 10}

Therefore, C' = {2, 3, 4, 8, 9}   **all elements of universal set leaving the elements of set C.**

 vii)**A ∪ B**

Here A = {1, 3, 4, 5}

B = (4, 5, 6, 2}

A ∪ B = {1, 2, 3, 4, 5, 6}

(viii) **B ∪ C**

Here B = {4, 5, 6, 2}

C = {1, 5, 6, 7, 10}

B ∪ C = {1, 2, 4, 5, 6, 7, 10}

(ix) **(B ∪ C)'**

Since, B ∪ C = {1, 2, 4, 5, 6, 7, 10}

Therefore, (B ∪ C)' = {3, 8, 9}

(x) **(A ∩ B)'**

A = {1, 3, 4, 5}

B = {4, 5, 6, 2}

(A ∩ B) = {4, 5}

(A ∩ B)' = {1, 2, 3, 6, 7, 8, 9, 10}

(xi) **(A ∪ B) ∩ C**

A = {1, 2, 3, 4}

B = {4, 5, 6, 2}

C = {1, 5, 6, 7, 10}

A ∪ B= {1, 2, 3, 4, 5, 6}

(A ∪ B) ∩ C = {1, 5, 6}

(xii) **A ∩ (B ∩ C)**

A = {1, 3, 4, 5}

B = {4, 5, 6, 2}

C = {1, 5, 6, 7, 10}
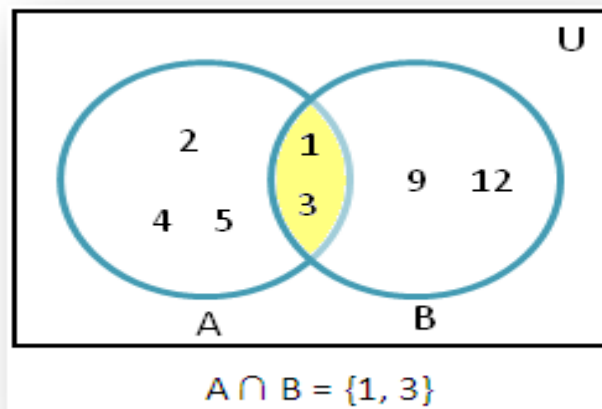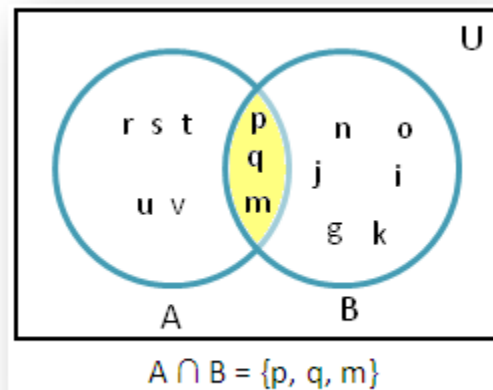
B ∩ C = {5, 6}

A ∩ (B ∩ C) = {5}

3) Solution:

According to the given question we know, A = {1, 2, 3, 4, 5} and B = {1, 3, 9, 12}

Now let's draw the venn diagram to find A intersection B.

A ∩ B = {1, 3}

Therefore, from the venn diagram we get A ∩ B = {1, 3}

4)

A ∩ B = {p, q, m}

Solution:

According to the adjoining figure we get;

Set A = {m, p, q, r, s, t, u, v}

Set B = {m, n, o, p, q, i, j, k, g}

Therefore, A intersection B is the set of elements which belong to both set A and set B.

Thus, A ∩ B = {p, q, m}
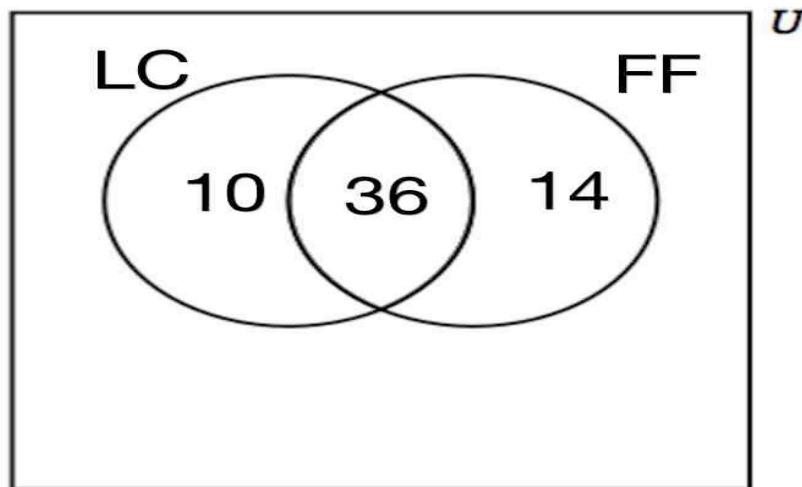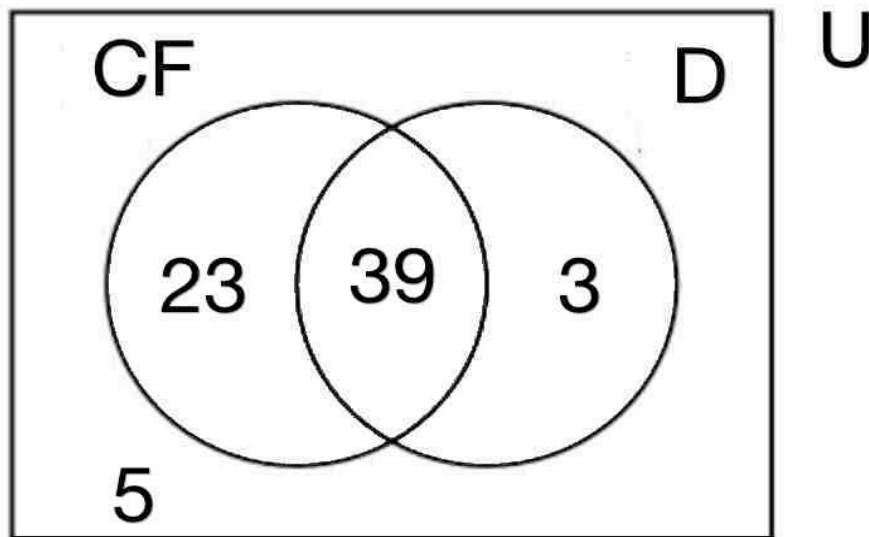
5) Solution

(a) How many of them liked both cereals?

n (FF) = 50; n (LC) = 46; n (FF [LC) = 60 so
n (FF \ LC) = 50 + 46   60 = 36.

(b) Draw a Venn diagram showing the results of the survey.

6) Solution

(a) Represent the information on a Venn Diagram.

(b) Use the Venn diagram to find how many of those surveyed did not like either movie.

Answer = 5. (from venn diagram)