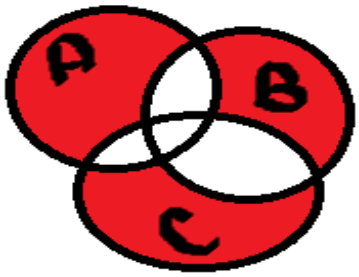
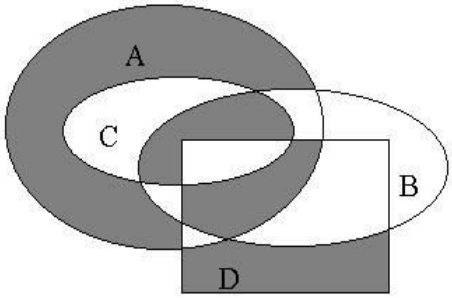
1.
A = {1,2,3,4,5,6,7}
B = {4, 5, 6, 7, 8, 9,
10} C = {2,4,6,8,10}
U= {1,2,3,4,5,6,7,8,9,10}
а) A∩(B ∪ C)={2,4,5,6,7}
б) B C = {2,5,7,9}
2.
C\(B\C)∩A = {2,4,6,8,10}
P(C\(B\C)∩A) = {∅,{2},{4},{6},{8},{10},{2,4},{2,6},{2,8},{2,10},{4,6},{4,8},{4,10},
{6,8},{6,10},{8,10},{2,4,6},{2,4,8},{2,4,10},{4,6,8},{4,6,10},{4,8,10},{2,6,8},{2,6,10},
{6,8,10},{2,8,10},{2,4,6,8},{2,4,6,10},{2,6,8,10},{2,4,8,10},{4,6,8,10},{2,4,6,8,10}}
3.
N – множина натуральних чисел Z –
множина цілих чисел
Q – множина раціональних чисел R –
множина дійсних чисел
A, B, C – будь-які множини а)
∅∈{1, 2, 3}; +
б) Z ⊂ R ; -
в) Q ∪ Z = Q; + г) R
\ Z ⊂ R \ N ; +
д) якщо A ⊂ B, то A∩C ⊂ B ∩C +
4.
¬(A ∪ B) ∩ A = ∅
¬A∩B∩A
∅ ∩B = ∅

5.



$$(B \cup C) \Delta A \setminus (B \cap C)$$

6.



$((A \setminus C) \setminus B) \cup ((D \setminus A) \setminus B) \cup ((C \cap B) \setminus D) \cup ((A \setminus C) \cap B) \cap \overline{D}$

7.

$(A \cap \neg B)\ (\neg A \cap B)$

$((A \cap \neg B) \setminus (\neg A \cap B)) \cup ((\neg A \cap B) \setminus (A \cap \neg B)) = ((A \cap \neg B) \cap (A \cup \neg B)) \cup ((\neg A \cap B) \cap (\neg A \cup B))$ – симетрична різниця

$(A \cap \neg B) \cap ((A \cup \neg B) \cup (\neg A \cup B))$ – закон дистрибутивності

$(A \cap \neg B) \cap (A \cup \neg B \cup \neg A \cup B)$ – закон асоціативності

$(A \cap \neg B) \cap (U \cup U) = (A \cap \neg B)$ – закон доповнення

8.

100=7+24+10+3+8+14+5+x

X=29

Програма

```
#include <stdio.h>

void Print(float *M, int n, int i)
{

    if (n)
    {
        if (n & 1)
            printf("%f ",M[i]);
        Print(M, n >> 1, i + 1);
    }
}

int main() {
    int n,k,num=0,m=0;

    printf("Enter number of elements in your set: \n");
    scanf("%d",&n);

    float A[n];
    for(int i=0; i<n; i++)
    {
        printf("Enter an element [%d]: ",i+1);
        scanf("%f",&A[i]);
```

```
}
printf("Enter number of elements in Universum: \n");
scanf("%d",&k);

float U[k];
for(int i=0; i<k; i++)
{
    printf("Enter an element [%d]: ",i+1);
    scanf("%f",&U[i]);
}
printf("Your set of numbers:\n");
for(int i=0; i<n; i++)
{
    printf("| %f |", A[i]);
}
printf("\n");
printf("Universum :\n");
for(int i=0; i<k; i++)
{
    printf("| %f |", U[i]);
}
float M[k];
printf("\n\n");
for (int i = 0; i < k; i++) {

    for (int j = 0; j < n; ++j) {
        if (U[i] == A[j]) {
            break;
        }
        if (j == n - 1) {
            M[m] = U[i];
            num += 1;

            printf("| %f |", M[m]);
            m +=1;
        }
    }

}
 int r, i, size;
size = num;
r = 1 << size;

printf("\n\nA = { 0");
for (i = 0; i < r; i++)
{
    Print(M, i, 0);
    printf(" | ");
}
printf("\n}");



return 0;
```

```
jharvard@appliance (~): ./labdm2
Enter number of elements in your set:
3
Enter an element [1]: 11
Enter an element [2]: 22
Enter an element [3]: 33
Enter number of elements in Universum:
3
Enter an element [1]: 1
Enter an element [2]: 2
Enter an element [3]: 3
Your set of numbers:
| 11.000000 || 22.000000 || 33.000000 |
Universum :
| 1.000000 || 2.000000 || 3.000000 |

| 1.000000 || 2.000000 || 3.000000 |

A = { 0 | 1.000000  | 2.000000  | 1.000000 2.000000  | 3.000000  | 1.000000 3.00
0000  | 2.000000 3.000000  | 1.000000 2.000000 3.000000  |
```