SUM OF SUBSETS:

PROGRAM:

```
#include <stdio.h>
#include <conio.h>
int count, w[10], d, x[10];
void subset(int cs, int k, int r)
{
    int i;
    x[k] = 1;
    if (cs + w[k] == d)
    {
        printf("\nSubset solution = %d\n", ++count);
        for (i = 0; i <= k; i++)
        {
            if (x[i] == 1)
                printf("%d  ", w[i]);
        }
    }
    else if (cs + w[k] + w[k + 1] <= d)
        subset(cs + w[k], k + 1, r - w[k]);
    if ((cs + r - w[k] >= d) && (cs + w[k + 1]) <= d)
    {
        x[k] = 0;
        subset(cs, k + 1, r - w[k]);
    }
}

void main()
{
    int sum = 0, i, n;
    printf("Enter the number of elements: ");
    scanf("%d", &n);
    printf("Enter the elements in ascending order\n");
    for (i = 0; i < n; i++)
        scanf("%d", &w[i]);

    printf("Enter the required sum\n");
    scanf("%d", &d);
    for (i = 0; i < n; i++)
        sum += w[i];
    if (sum < d)
    {
        printf("No solution exists\n");
        return;
    }
    printf("The solution is:\n");
```

```
    count = 0;
    subset(0, 0, sum);
}
```

OUTPUT:

```
User@PRATHIKSHA /c/ada lab
$ cd "/c/ada lab/" && gcc sum_of_subsets.c -o sum_of_subsets && "/c/ada lab/"sum_of_subsets
Enter the number of elements: 5
Enter the elements in ascending order
1 2 5 6 8
Enter the required sum
9
The solution is:

Subset solution = 1
1  2  6
Subset solution = 2
1  8
```