Session 2 Solution

Achieve Target 1

```c
#include<stdio.h>
void main() {
    int people;
    int tableCount;
    int remainder;

    printf("Enter number of people ");
    scanf("%d", &people);

    tableCount = people / 12;
    remainder = people % 12;

    printf("Minimum %d tables and remainder is %d\n", tableCount, remainder);
    fflush(stdin);
    getchar();
}
```

Achieve Target 2

```
a + b is 35
a - b is 15
a * b is 250
a / b is 2
a % b is 5
a < b is 0
a > b is 1
a <= b is 0
a >= b is 1
a == b is 0
a != b is 1
a && b is 1
a || b is 1
a = b = 30 is 30
value of a and b are 30 30
```

Given that a is 25 and b is 10.

It is important to note that many operators will evaluate to either 0 or 1 only. The two numbers 0 and 1 have special meanings in C. If the value generated by an operator is 0, it implies the concept of false. Otherwise if the value generated by an operator is 1, it implies the concept of true.
You may ask what about values other than 0 and 1. Do those values have a concept? The answer is that non-zero values are also considered in C as true. Take the && (AND) and || (OR) operators for example. The AND operator will produce value 1 only when both operands are non-zero. This agrees with our common understanding that The AN Ding of two things is true if and only if the two things are true (non-zero).

Please study the Appendix of the Perform Exercise for details on the operators.

Achieve Target 3

```c
#include<stdio.h>

void main() {

    int people;
    int tableCount;

    printf("Enter number of people ");
    scanf("%d", &people);

    tableCount = people / 12 + (people % 12 > 3);

    printf("Actual number of tables is %d\n", tableCount);
    fflush(stdin);
    getchar();
}
```

Achieve Target 4

If the value following the if keyword is zero, then the following statement is not executed. If the value is non-zero, the following statement is executed.

To rewrite the program to write "One", "Five", and "Six", the method is to change the values following the if keywords. Change it to zero if the printing is not desired. Change it to non-zero if printing is desired. To not print the "Seven", an addition if keyword could be added or simply remove the statement.

```c
#include<stdio.h>

void main() {
    if (1)
        printf("One\n");
    if (0)
        printf("Two\n");
    if (0)
        printf("Three\n");
    if (0)
        printf("Four\n");
```
if (1) {
    printf("Five\n");
    printf("Six\n");
}
if (0)
    printf("Seven\n"); /* alternative is simply to remove the statement */
getchar();

#include<stdio.h>

void main() {

    int people;
    int tableCount;

    printf("Enter number of people ");
    scanf("%d", &people);
    tableCount = people / 12;

    if (people % 12 > 3) {
        tableCount++;
    }
    printf("Actual number of tables is %d\n", tableCount);
    fflush(stdin);
    getchar();
}
Achieve Target 6

```c
#include<stdio.h>

/* Rewrite the BMI calculator with health evaluation */

void main()
{
    float height, weight, bmi;

    printf("BMI calculator\n");

    printf("Enter your Height(m): ");
    scanf("%f", &height);

    printf("Enter your Weight(kg): ");
    scanf("%f", &weight);

    bmi = weight / (height * height);
    printf("BMI = %f\n", bmi);

    if (bmi < 19)
        printf("Underweight\n");
    if (bmi >= 19 && bmi <= 22)
        printf("Just Right\n");
    if (bmi > 22 && bmi <=25)
        printf("Overweight\n");
    if (bmi > 25)
        printf("Health at Risk\n");
    fflush(stdin);
    getchar();
}
```