COMPUTER LABORATORY 3

Task 1 Copy the program given below. Save (as `grade.cpp`), compile and run it.

```cpp
// Grade calculator
#include <iostream>
#include <string>
using namespace std;
int main(){
int mt1, mt2, fin;
cout << "Enter the three exam scores: ";
cin >> mt1 >> mt2 >> fin;
double avr = 0.3*mt1 + 0.3*mt2 + 0.4*fin;
cout << "The weighted score is " << avr << endl;
string grade;
if (avr < 40. ) grade = "FF";
else if (avr >= 40. && avr < 50.) grade = "FD";
else if (avr >= 50. && avr < 60.) grade = "DD";
else if (avr >= 60. && avr < 70.) grade = "DC";
else if (avr >= 70. && avr < 75.) grade = "CC";
else if (avr >= 75. && avr < 80.) grade = "CB";
else if (avr >= 80. && avr < 85.) grade = "BB";
else if (avr >= 85. && avr < 90.) grade = "BA";
else grade = "AA";
cout << "The grade is " << grade << endl;
system("Pause");
return 0; }
```

Task2

Write a C++ program that does the below
1) User should enter (+) or (-) operation
2) User should enter two integer numbers a and b
3) Compute the $\dfrac{1}{a} + \dfrac{1}{b}$ for (+) operation and $\dfrac{1}{a} - \dfrac{1}{b}$ for (-) operation in terms of ratios
4) if either a or b is zero it will print out that "Operation can not be done"
5) If the operation is something else than + or – print out "Invalid operation"
Write one code using if else if and one code for switch. Thus you will write two codes.
Program screen should be as on the next page

```
Enter the operation type (+ or -) :
+
Enter two integer numbers :
5 0
Operation can not be done
```

```
Enter the operation type (+ or -) :
-
Enter two integer numbers :
6 8
*********
1/6-1/8=2/48
```

```
Enter the operation type (+ or -) :
*
Enter two integer numbers :
5 8
Invalid Operation
```

Task3 Write a C++ code that will read a real data, x, and compute the value of the function f(x) based on the value of x.

$$f(x)= \begin{cases} 0 & x<=0 \\ \dfrac{3}{\sqrt{x^3 +1}} & 0<x<=10 \\ 2x^2 & x>10 \end{cases}$$

The code should work as below

Please enter the value of x:

-5

For x=-5 Value of f(x)=0

Please enter the value of x:

2

For x=2 Value of f(x)=1

Task4

Write a program to calculate the monthly telephone bills as per the following rule:

Minimum bill is 200TL for upto 100 calls.

0.60TL per call for next 50 calls.

0.50TL per call for next 50 calls.

0.40TL per call for any call beyond 200 calls.