Assignment (2)
Questions:

1-   Specify how many bytes are occupied by the following data types in C ++

a-   Type short int .
b-   Type long double.
c-   Type float.
d-   Type long.

2-   True or false. A variable of type char can hold the value 301.

3-   What kind of program elements (character constant, int constant, variable name, floating point constant) are the following?

a-   12
b-   'a'
c-   4.28915
d-   January

4-   True of false: It's perfectly all right to use variables of different data types in the same arithmetic expression.

5-   What are the advantages of using the const keyword rather than #define ?

6-   What are the differences between an unsigned short int and a long int?

7-   What is the difference between an integr variable and a floating point variable ?

8-   Which of the following variable names are good, which are bad and which are invalid ?

a-   Age
b-   ! ex
c-   TotalIncome
d-   R 79x
e-   Invalid

9-   What would be the correct variable type in which to store the following information ?

     a-   Your age .

     b-   The area of your class room.

     c-   The population of people in Egypt.

     d-   The average mark of the students in the class.

Exercises:

1) Trace the following program and find what it prints.

```cpp
// Exercise1.cpp
#include <iostream.h>
int main( )
{
    cout << " \n Hello there \n" ;
    cout << " Here is 5: " << 5 << " \n" ;
    cout << " The manipulator endl writes a new line
           to the screen." << endl ;
    cout << " Here is a very big number: \t " << 7000
           << endl ;
    cout << " Hee is the sum of 8 and 5: \t << 8+5 <<
           endl ;
    cout << " Here is a fraction: \t \t " << ( float ) ¾
           << endl;
    return o ;
}
```

2)   Write a program to calculate the area of a triangle. The program should ask the user to enter the length and the height of the triangle. It calculates its area and displays it.

3)   If you have tow fractions, a / b and c / d, their sum can be obtained from the formula.

$$\frac{a}{b} + \frac{c}{d} = \frac{a * d + b * c}{b * d}$$

Write a program that asks the user to enter two fractions and then displays their sum in fractional from. The output of the program might look like this:

Enter first fraction: 1/2
Enter second fraction: 1/5
Sum = 7/10