1. Write a statement that asks the user to type three integer and another statement that stores the user responses into first, second, third.

```
int firstNumber;

int secondNumber;

int thirdNumber;


printf("Please type \"THREE INTEGERS\" \nType the first one: ");

scanf("%d",                                          &firstNumber);


printf("Type the second one: ");

scanf("%d", &secondNumber);


printf("Type the last one: ");

scanf("%d", &thirdNumber);


   printf("The first integer you give is %d \nThe second one is %d \nAnd
the third one is %d \n", firstNumber, secondNumber, thirdNumber);
```

2. List 3 standard data types of C.

Int, Char, Double.

3. The average pH of citrus fruits is 2.2, and this value has been stored in the variable avg_citrus_pH Provide a statement to display this information in a readable way.

```
double avg_citrus_pH = 2.2;

printf("The average pH of citrus fruit is %f", avg_citrus_ph);
```

4. Write an algorithm that allows for the input of an integer value,doubles it, subtracts 10, and displays the result.

```
#include <stdio.h>

int main () {


    int num1;

    int result;


    printf("This programm will double the integer input and subtract it with ten then displays the result \nPlease input an integer: ");

    scanf("%d", &num1);


    result = (num1 * 2) - 10;

    printf("The result is %d", result);

    return 0;

}
```

5. Given the following declarations:

```
#define PI 3.14159
#define MAX_I 1000
double x, y;
int a, b, i;
```

Indicate which of the following statements are valid, and find the value stored by each

valid statement. Also indicate which are invalid and why. Assume that a is 3, b is 4,

and y is -1.0:

a. `i = a % b;`

// Invalid, the program is tasked to get the remainder of the division of “a” and “b”. But the problem was “a” < “b” which result into a rational number or a fraction of a number, and the computer spits out the numerator of the fraction as the result of the operation; i = a or i = 3.

b. `i = (989 – MAX_I) / a;`

// Valid, i = -3;

c. `i = b % a;`

//Valid, i = 1;

d. `x = PI * y;`

//Valid, x = -3.141590;

e. `i = a / –b;`

//Valid, x = 0;

f. `x = a / b;`

//Valid, x = 0;

g. x = a % (a / b);

//Invalid, for “a / b” as an integer is equals to 0, any number divided by zero is invalid.

h. i = b / 0;

//Invalid, any number divided by 0 is invalid.

I. i = a % (990 – MAX_I);

// Invalid, the program is tasked to get the remainder of the division of “a” and “(990 – MAX_I)”. But the problem was “990 - MAX_I” is equals to “-10” which results into a rational number or a fraction of a number, and the computer spits out the numerator of the fraction as the result of the operation; i = a or i = 3.

j. i = (MAX_I – 990) / a;

//Valid, i = 3;

k. x = a / y;

//Valid, i = -3.000000;

l. i = PI * a;

//Valid, i = 9;

m. x = PI / y;

//Valid, x = -3.141590;

n. x = b / a;

//Valid, x = 1.000000;

o. i = (MAX_I – 990) % a;

//Valid, i = 1;

```
    p.  i = a % 0;

//Invalid, any number divided by 0 is invalid.



    q.  i = a % (MAX_I – 990);

     // Invalid, the program is tasked to get the remainder of the division of “a” and “(MAX_I - 990)”. But the problem is that “MAX_I - 990” is equals to “10” which results into a rational number or a fraction of a number, and the computer spits out the numerator of the fraction as the result of the operation; i = a or i = 3.
```

6. An algorithm that gets three data values x, y, and z as input and outputs the average of those three values.

```
//Variables

double            x,            y,            z,            average;


//Getting the input

//First input

    printf("Please enter the first value: ");

    scanf("%lf", &x);



     //Second input

    printf("Enter the second value: ");

    scanf("%lf", &y);



//Third input

    printf("Enter the third value: ");

    scanf("%lf", &z);

//Get the average value

     average = (x + y + z) / 3;

//Display the average value

    printf("The average value is %f", average);
```

7. An algorithm that gets the amount of electricity used in kilowatt-hours and the cost of electricity per kilowatt hour. Its output is the total amount of the electric bill, including an 8% sales tax.

```
//Constants

KW_PER_HOUR_RATE = 9.5458

SALES_TAX = 0.08



//Variable

double KW_per_hour_used;



//Getting the Input

    printf("Please enter your consumed electricity per killowatt-hour: ");

    scanf("%lf", &KW_per_hour_used);



//Display the electricity bill

    printf("Your electricity bill is %f Pesos", (KW_per_hour_used * KW_PER_HOUR_RATE) * SALES_TAX);
```

8. An algorithm that is given three numbers corresponding to the number of times a race car driver has finished first, second, and third. The algorithm computes and displays how many points that driver has earned given 5 points for a first, 3 points for a second, and 1 point for a third place finish.

```
//Constants

FIRST_PLACE_POINTS = 5

SECOND_PLACE_POINTS = 3

THIRD_PLACE_POINTS = 1



//Variables

int num1, num2, num3, totalPoints;
```

```
// Getting inputs
//First input
    printf("Enter the number of times he placed first: ");
    scanf("%d",                                                    &num1);

//Second input
    printf("Enter the number of times he placed second: ");
    scanf("%d", &num2);

      //Third input
    printf("Enter the number of times he placed third: ");
    scanf("%d", &num3);

      //Gettin the total points
    totalPoints   =   (num1   *   FIRST_PLACE_POINTS)   +   (num2   *
SECOND_PLACE_POINTS) + (num3 * THIRD_PLACE_POINTS);

      //Display the total points
    printf("The drivers total points is %d", totalPoints);
```