Write a C program for each of the following questions.

1. Display your name and school name in two separate lines.

```
#include <stdio.h>


int main() {
   printf ("Name: John Doe\n");
   printf ("School: XYZ High School\n");
   return 0;
}
```

2. Display the following output using printf () statements

```
*
**
***
****
*****
```

```
#include <stdio.h>


int main () {
   printf("*\n");
   printf("**\n");
   printf("***\n");
   printf("****\n");
   printf("*****\n");
   return 0;
}
```

3. Input values for and char data types and display the value of each of the variable.

```
#include <stdio.h>


int main () {
   int num;
   char ch;


   printf ("Enter an integer: ");
   scanf("%d", &num);


   printf ("Enter a character: ");
   scanf(" %c", &ch);


   printf("The value of the integer is: %d\n", num);
   printf ("The value of the character is: %c\n", ch);


   return 0;
}
```

4. Input two integers and display the total.

```
#include <stdio.h>

int main() {
  int num1, num2, sum;

  printf ("Enter the first integer: ");
  scanf("%d", &num1);

  printf("Enter the second integer: ");
  scanf("%d", &num2);

  sum = num1 + num2;

  printf("The sum of %d and %d is: %d\n", num1, num2, sum);

  return 0;
```

5. Input two numbers with decimals(fractions) and display the Avera e with decimals.

```
#include <stdio.h>

int main() {
   float num1, num2, average;

   printf("Enter the first number: ");
   scanf("%f", &num1);

   printf("Enter the second number: ");
   scanf("%f", &num2);

   average = (num1 + num2) / 2;

   printf("The average of %.2f and %.2f is: %.2f\n", num1, num2, average);

   return 0;
}
```

6. Input a student name, birth year and display student name with age.

```
#include <stdio.h>
#include <time.h>

int main() {
    char name[50];
    int birthYear, currentYear, age;

    printf("Enter the student's name: ");
    scanf("%s", name);

    printf("Enter the student's birth year: ");
    scanf("%d", &birthYear);

    // Get the current year
    time_t t = time(NULL);
    struct tm *localTime = localtime(&t);
    currentYear = localTime->tm_year + 1900;

    // Calculate the student's age
    age = currentYear - birthYear;

    printf("Student: %s\n", name);
    printf("Age: %d\n", age);

    return 0;
}
```

7. Input two numbers, swap the values and display the output. (Before swap and after swap)

```
#include <stdio.h>

int main() {
    int num1, num2, temp;

    printf("Enter the first number: ");
    scanf("%d", &num1);

    printf("Enter the second number: ");
    scanf("%d", &num2);

    printf("\nBefore swap:\n");
    printf("First number: %d\n", num1);
    printf("Second number: %d\n", num2);

    // Swapping the values
    temp = num1;
    num1 = num2;
    num2 = temp;

    printf("\nAfter swap:\n");
    printf("First number: %d\n", num1);
    printf("Second number: %d\n", num2);

    return 0;
}
```

8. Execute the following code and analyze the output. Study the output format.

```
main()
{
printf("The color: %s\n", "blue");
printf(“First number: O/od\n", 12345);
printf('Second number: 0/004d\n", 25);
printf("Third number: %\n", 1234);
printf("Float number: 0/03.2f\n", 3.14159);
printf("Hexadecimal: 255);
printf (“Octal:%o\n", 255);
printf("Unsigned value: %u\n", 1 50);
printf("Just print the percentage sign %%\n", 10);
}
```

```
printf("The color: %s\n", "blue");
printf("First number: %d\n", 12345);
printf("Second number: %04d\n", 25);
printf("Third number: %\n", 1234);
printf("Float number: %0.2f\n", 3.14159);
printf("Hexadecimal: %x\n", 255);
printf("Octal: %o\n", 255);
printf("Unsigned value: %u\n", 150);
printf("Just print the percentage sign %%\n", 10);
```

Write a C program for each of the following question

Question 1

Have the computer print

HI, HOW OLD ARE YOU?

on one line. The user then enters his or her age immediately after the question mark. The computer then skips two lines and prints on two consecutive lines.

WELCOME (age)

LET'S BE FRIENDS!

Write a complete C program to do the above.

```
#include <stdio.h>


int main() {
   int age;


   printf("HI, HOW OLD ARE YOU? ");
   scanf("%d", &age);


   printf("\n\nWELCOME %d\n", age);
   printf("LET'S BE FRIENDS!\n");


   return 0;
}
```

Question 2

Write a program which uses the format commands With to print the following output:

2 4 8

3 9 27

416 64

525 125

```
#include <stdio.h>


int main () {
   printf ("%-4d%-6d%-8d\n", 2, 4, 8);
   printf ("%-4d%-6d%-8d\n", 3, 9, 27);
   printf ("%-4d%-6d\n", 416, 64);
   printf ("%-4d%-6d\n", 525, 125);


   return 0;
}
```

Question-3

Write a simple program to evaluate the average speed of a car traveled in meters per second (ms'). Given that

Try using integer variables. What would be the problem? Why?

HOW to fix the problem?

```
#include <stdio.h>


int main() {
   float distance, time, speed;


   printf("Enter the distance traveled (in meters): ");
   scanf("%f", &distance);


   printf("Enter the time taken (in seconds): ");
   scanf("%f", &time);


   speed = distance / time;


   printf("The average speed is: %.2f m/s\n", speed);


   return 0;
}
```

Question-4

Convert a temperature reading in degrees Fahrenheit to degrees Celsius, using the formula.

C = (5/9) x (F-32)

Test the program with the following values: 68, 150, 212, 0, -22, -200 (degree Fahrenheit).

```
#include <stdio.h>


int main() {
   float Fahrenheit, Celsius;


   printf("Enter the temperature in Fahrenheit: ");
   scanf("%f", &Fahrenheit);


   Celsius = (5.0 / 9.0) * (Fahrenheit - 32);


   printf("Temperature in Celsius: %.2f\n", Celsius);


   return 0;
}
```