1. What is the output of this program fragment?

int i = 0;

while (i <=5){

printf("%3d, %3d\n", i, i-10);

i = i + 1;

}

**Answer: 0, -10**

**1, -9**

**2, -8**

**3, -7**

**4, -6**

**5, -5**

1. What output values are displayed by the following while loop for a data value of 5? of 6? of 7?

printf("Enter an integer>");

scanf("%d", &x);

product = x;

count = 0;

while(count < 4){

printf("%d\n", product);

product \*= x;

count += 1;

}

**Answer: on x = 5: 5 ; on x = 6: 6 ; on x = 7: 7**

**25 36 49**

**125 216 343**

**625 1296 2401**

1. What is the given output of this program fragment given that N = 8?

int N, sum = 0;

for( i = 0; i < N; i++){

sum = sum + 1;

}

printf("%d \n", sum);

**Answer: 8**

1. What is the output of this program fragment?

int j, i = 10;

for(j=i; j<= 5; ++j){

printf("%d %d \n", i, j);

i -= 2;

}

**Answer: Displays “None”, because the condition is already false, so the program skip the loop.**

1. What is the following program fragment trying to do?

do{

printf("enter a number: ");

scanf("%d", &num);

} while((num < 0) || (num >= 10));

**Answer: The program is asking the user to input a number, and the program will ask the user repeatedly for a number if the number given by the user is less than zero or it is more than or equals to ten.**

1. What will be the values of n , m, and p after executing the following statements when j = 5 and k = 2?

n = j - ++k;

m = j-- + k--;

p = k + j;

**Answer: n = 2, m = 8, p = 6.**

1. What is the output of this program fragment?

printf(" i j\n");

for(i=1; i<4; ++i){

printf("Outer %3d\n",i);

for(j=0; j<i; ++j){

printf("Inner %11d\n",j);

}

}

**Answer: The program will give error because the ‘i’ and ‘j’ is not declared as a variable.**

1. Complete the definition of the function factorial that computes the factorial of an integer n,

**int factorial(int n){**

**int result = 1;**

**int num = n;**

**for (int i = 0; i < n; i++)**

**{**

**result = result \* num--;**

**}**

**return result;**

**}**