

ICS 103  
Sample Quiz 3

**Question 1 (18 POINTS):**

Find the output of the following programs:

**I)**

```
#include<stdio.h>
int main(void){
int k, m, n;
n = 0;
for(k = -7; k < 13; k += 4){
    n++;
    for(m = 3; m <= 6; m += 5)
        n += 4;
    n += 2;
}
printf("%d\n%d\n%d\n",n,k,m);
return(0);}
```

**OUTPUT**

35  
13  
8

**II)**

```
#include<stdio.h>
int main(void){
int k = 0, x = 5, done = 0;
do{
    done = 1;
    scanf("%d",&x);
    for(k = x + 1; k > 4; k--)
        done = 0;
} while(x != 5 && !done);
printf("%d %d\n%d\n",x,k,done);
return(0);}
```

**OUTPUT**

2 3  
1

The Input for this Program is:

6 7 2 5

**III)**

```
#include<stdio.h>
int main(void){
int i = 10, j = -6;
while(i < 12){
    while(-1 > j){
        printf("%d %d\n",i,j);
        j = j + 3;
    }
    i = i + 1;
}
printf("%d %d\n",i,j);
return(0);}
```

**OUTPUT**

10 -6  
10 -3  
12 0

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Question 2: (4 points)

Rewrite the following program by converting all the "for" loops to their equivalent "while" loops:

```
#include<stdio.h>
int main(void){
double sum = 0;
int i, j;
for(j = 20; j <= 201; j += 10)
    for(i = -j; i <= 5; i += j/2)
        sum += i/j;
printf("%f\n",sum);
return 0;}
```

```
#include<stdio.h>
int main(void){
double sum = 0;
int i, j;
j = 20;
while(j <= 201){
    i = -j;
    while(i <= 5){
        sum += i/j;
        i += j/2;
    }
    j += 10;
}
printf("%f\n",sum);
return 0;}
```