

Name (PRINTED): _____

Student ID #: _____

Section # (or TA's: _____
name and time)

CMSC 106

Quiz #7

Fall 2007

What would the output of each of the following TWO programs be? You do not need to be concerned with showing spaces printed, only with showing the correct values printed on the correct lines.

On the back side of the paper, you will need to write one function of your own.

1. [8 pts.]

```
#include <stdio.h>
#define SIZE 4
int fun1(int x, int y){
    int z;
    z = ++x * y++;
    return z;
}
int fun2(int *x){
    int store = *x;
    *x = 6;
    return store * *x;
}
int main(){
    int a=3, b=5, c=6, d = 3;

    c = fun1(a,b);
    c += fun2(&d);

    printf("%d %d and %d\n",a,b,c);
    printf("then %d \n", fun1(2,4));

    return 0;
}
```

3 5 and 38

then 12

2. [10 pts.]

```
#include <stdio.h>
#define SIZE 4
int fun1(int a){
    printf("%d\n",a++);
    printf("%d\n",a*SIZE);
    return SIZE;
}
void fun2(int *b){
    *b = *b * SIZE;
}
int main(){
    int a=3, b=5, c=6;

    fun2(&a);
    printf("%d %d %d\n",a,b,c);
    fun1(b+c);
    printf("%d %d %d\n",a,b,c);

    return 0;
}
```

12 5 6

11

48

12 5 6

3. [12 pts.] Write a function which takes in three integers as three parameters and returns both their sum and their average.

Here are three different possibilities.

```
1:
#include <stdio.h>

void getVals(int i, int j, int k,
int *sum, float *ave){
    *sum = i + j + k;
    *ave = *sum/3.0;
}

int main(){
    int val1 = 5, val2 = 7, val3 = 6;
    int sum = 0;
    float average = 0;

    getVals(val1,val2,val3,&sum,&average);
    printf("sum = %d and Ave = %.2f\n",
sum, average);

    val1 = 5; val2 = 7; val3 = 9;
    sum = 0;
    average = 0;

    getVals(val1,val2,val3,&sum,&average);
    printf("sum = %d and Ave = %.2f\n",
sum, average);
    return 0;
}
```

```
2:
#include <stdio.h>

int getVals(int i, int j, int k,
float *ave){
    *ave = (i+j+k)/3.0;
    return i+j+k;
}

int main(){
    int val1 = 5, val2 = 7, val3 = 6;
    int sum = 0;
    float average = 0;

    sum = getVals(val1,val2,val3,&average);
    printf("sum = %d and Ave = %.2f\n",
sum, average);

    val1 = 5; val2 = 7; val3 = 9;
    sum = 0;
    average = 0;

    sum = getVals(val1,val2,val3,&average);
    printf("sum = %d and Ave = %.2f\n",
sum, average);
    return 0;
}
```

```
3:
#include <stdio.h>

float getVals(int i, int j, int k,
int *sum){
    *sum = i+j+k;
    return ((*sum)/3.0);
}

int main(){
    int val1 = 5, val2 = 7, val3 = 6;
    int sum = 0;
    float average = 0;

    average = getVals(val1,val2,val3,&sum);
    printf("sum = %d and Ave = %.2f\n",
sum, average);

    val1 = 5; val2 = 7; val3 = 9;
    sum = 0;
    average = 0;

    average = getVals(val1,val2,val3,&sum);
    printf("sum = %d and Ave = %.2f\n",
sum, average);
    return 0;
}
```