

COP 3223 Quiz #3 10/17/2025

Last Name: _____, First Name: _____

Circle Lab Time: 8:30 am

9:30 am

11:30 am

12:30 pm

1:30 pm

2:30 pm

3:30 pm

4:30 pm

1) (7 pts) For a positive integer, n , define $d(n)$ to be the number of digits in n . Complete the function below so that it returns the number of digits in the formal parameter, n . You may assume that n is positive.

```
int d(int n) {
```

```
}
```

2) (5 pts) What is the output of the following program?

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

```
int main() {
```

```
    int arr[5] = {6, 2, 8, 3, 5};
```

```
    for (int i=0; i<4; i++)
```

```
        arr[i+1] += arr[i];
```

```
    for (int i=0; i<5; i++)
```

```
        printf("%d ", arr[i]);
```

```
    printf("\n");
```

```
    return 0;
```

```
}
```

3) (8 pts) What is the output of the following program?

```
#include <stdio.h>

int f(int a, int *b);
int g(int* a, int b);

int main() {
    int a = 2, b = 1;
    b = f(b, &a);
    printf("In main: a = %d, b = %d\n", a, b);
    a = g(&b, a);
    printf("In main: a = %d, b = %d\n", a, b);
    return 0;
}

int f(int a, int *b) {
    int c = *b + 2*a;
    a = c%9 + 2;
    *b = c - 2*(*b);
    printf("In f: a = %d, b = %d\n", a, *b);
    return a + 2*(*b);
}

int g(int* a, int b) {
    int c = b + 2*(*a);
    *a = c%9 + 2;
    b = c - 2*b;
    printf("In f: a = %d, b = %d\n", *a, b);
    return (*a) + 2*b;
}
```

In f: a = _____ , b = _____

In main a = _____ , b = _____

In g: a = _____ , b = _____

In main a = _____ , b = _____

4) (15 pts) James has logged the number of minutes he's read each day for a whole year. Specifically, the data is stored in the input file "reading.txt". The first 365 numbers in the file (one per line) are the number of minutes he read on each day of the year. The following line (line 366) stores a single integer, n , representing the number of questions about James's reading. Each of the following n lines has two integers, s and e , representing the start day number (in between 0 and 364) and the end day number (in between s and 364). You are to print out to the screen the total number of minutes James read in between day s and day e , inclusive, for each question. (Note: Read in one pair of integers, s and e , and immediately calculate and print out the answer for that question. Repeat this n times. Do not read all the information in before attempting to process it.)

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

```
int main() {
```

```
    int minutesRead[365], n, start, end;
```

```
    FILE* ifp = _____ ;
```

```
    return 0;
```

```
}
```

```
int equal(int list1[], int list2[], int length) {
```

Index	0	1	2	3	4	5	6
Original	22	13	6	21	29	3	8
After 1 st iteration							
After 2 nd iteration							
After 3 rd iteration							
After 4 th iteration							
After 5 th iteration							
After 6 th iteration	3	6	8	13	21	22	29
