Name : _____

Instructor (circle) Cordes Zhang

CS 100 Exam 3

What is the output of the C program shown below when run with the command **./a.out ABC dog hike COP 13597**

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

int function(char *str) {
    int len = strlen(str) - 1;
    for (int a=0; a<len; a++)
        if (str[a] > str[a+1])
            return 1;
    return 0;
}

int main(int argc, char *argv[]) {
    for (int a=1; a<argc; a++)
            printf("%d\n", function(argv[a]) );
        return 0;
}
```

What is the output of the C program below when run with the command **./a.out DATA**

| DATA |
|---|
| 0 |
| 11 |
| 22 |
| 2 |
| 20 |
| 0 |
| 11 |
| 22 |

```
#include <stdio.h>
int main(int argc, char *argv[]) {
     int num, data[3][3];
     for (int a=0; a<3; a++)
          for (int b=0; b<3; b++)
               data[a][b] = 0;
     FILE *fp = fopen(argv[1], "r");
     fscanf(fp, "%d", &num);
     while ( ! feof(fp) ) {
          int x = num / 10;
          int y = num % 10;
          data[x][y] = data[x][y] + 1;
          fscanf(fp, "%d", &num);
     }
     fclose(fp);
     for (int a=0; a<3; a++) {
          for (int b=0; b<3; b++)
               printf("%d ", data[a][b]);
          printf("\n");
     }
     return 0;
}
```

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CS 100 Exam 3

What is the output of the C program shown below when run with the command **./a.out CAT xyz coat UA 2468**

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

int function(char *str) {
    int len = strlen(str) - 1;
    for (int a=0; a<len; a++)
        if (str[a] > str[a+1])
            return 1;
    return 0;
}

int main(int argc, char *argv[]) {
    for (int a=1; a<argc; a++)
        printf("%d\n", function(argv[a]) );
        return 0;
}
```

What is the output of the C program below when run with the command **./a.out DATA**

| DATA |
|---|
| 11 |
| 1 |
| 10 |
| 12 |
| 11 |
| 11 |
| 10 |
| 12 |
| 21 |

```
#include <stdio.h>
int main(int argc, char *argv[]) {
     int num, data[3][3];
     for (int a=0; a<3; a++)
          for (int b=0; b<3; b++)
               data[a][b] = 0;
     FILE *fp = fopen(argv[1], "r");
     fscanf(fp, "%d", &num);
     while ( ! feof(fp) ) {
          int x = num / 10;
          int y = num % 10;
          data[x][y] = data[x][y] + 1;
          fscanf(fp, "%d", &num);
     }
     fclose(fp);
     for (int a=0; a<3; a++) {
          for (int b=0; b<3; b++)
               printf("%d ", data[a][b]);
          printf("\n");
     }
     return 0;
}
```