

## Paper code D

### 1. Answers

- a. 3
- b. 2
- c. 1
- d. 2
- e. 4

### 2. Codes

```
1 #include <stdio.h>
2 int main() {
3     int i = 1,j;
4     for(i=1;i<=4;i++){
5         for(j=1;j<=i;j++){
6             printf("* ");
7         }
8         printf("\n");
9     }
10    return 0;
11 }
```

a.

```
1 // Online C compiler to run C program online
2 #include <stdio.h>
3
4 int main() {
5     int i = 1,j;
6     for(i=4;i>=1;i--){
7         // printf("%d ",i);
8         for(j=1;j<=i;j++){
9             printf("* ");
10        }
11        printf("\n");
12    }
13
14
15    return 0;
16 }
```

b.

### 3. Code:

```

1  #include <stdio.h>
2  int funcA(int a){
3      int originalNum, remainder, result = 0;
4      originalNum = a;
5      while (originalNum != 0) {
6          remainder = originalNum % 10; //// remainder contains the last digit
7          result += remainder * remainder * remainder;
8          originalNum /= 10; // removing last digit from the original number
9      }
10     if (result == a)         return 1;
11     else                     return 0;
12 }
13 int funcB(int* a){
14     int originalNum, remainder, result = 0;
15     originalNum = *a;
16     while (originalNum != 0) {
17         remainder = originalNum % 10; //// remainder contains the last digit
18         result += remainder * remainder * remainder;
19         originalNum /= 10; // removing last digit from the original number
20     }
21     if (result == *a)         return 1;
22     else                     return 0;
23 }
24
25 int main() {
26     int num, flag, flag1;
27     printf("Enter a three-digit integer: ");
28     scanf("%d", &num);
29     flag = funcA(num); //calling funcA by value
30     if (flag == 1)
31         printf("\n%d is an Armstrong number.", num);
32     else
33         printf("\n%d is not an Armstrong number.", num);
34     flag1 = funcB(&num); //calling funcB by reference
35     if (flag1 == 1)
36         printf("\n%d is an Armstrong number.", num);
37     else
38         printf("\n%d is not an Armstrong number.", num);
39
40     return 0;
41 }

```