1. Code:

```c
1  #include <stdio.h>
2  int new_strlen(char A[]){
3      int x=0;
4      while(A[x]!='\0')
5          x++;
6      return x;
7  }
8  void new_strcpy(char A[], char B[]){
9      int l, c=0;
10     l = new_strlen(A);
11     for(c=0;c<l;c++)
12         B[c] = A[c];}
13  int main() {
14      char X[20], Y[20];
15      int len, i=0;
16      printf("Enter the string elements for X[20]: ");
17      gets(X);
18      len = new_strlen(X);
19      new_strcpy(X,Y);
20      printf("\nLength of input string = %d",len);
21      printf("\nThe original string: ");
22      puts(X);
23      printf("\nThe modified string: ");
24      puts(Y);
25      return 0;}
```

a.

2. Codes

```c
1  #include <stdio.h>
2  int main() {
3      int X[10];
4      int index=100, i=0;
5      printf("\nPlease enter array elements for X[10]: \n");
6      for(i=0;i<10;i++)
7          scanf("%d", &X[i]);
8      for(i=1;i<9;i++){
9          if(X[i]>X[i-1] && X[i]>X[i+1]){
10             index = i;
11             break;
12         }
13     }
14     if(index == 100)
15         printf("\nno peak element found in given array");
16     else{
17         printf("\nThe peak element is %d at index %d", X[index], index);
18     }
19     return 0;}
```

a.