```cpp
1  /*
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3
4      CS A250
5      February 10, 2018
6
7      Lab 1
8  */
9
10  #include <cstdlib>
11  #include <iostream>
12  using namespace std;
13
14  const int CAPACITY = 10;
15
16  // Declaration function insertAtIndex
17  void insertAtIndex(int a[], int& numElements, int num, int index);
18
19  #include "Testing.hxx"
20
21  int main( )
22  {
23      testCases();
24
25      cout << endl;
26      system("Pause");
27      return 0;
28  }
29
30  // Definition function insertAtIndex
31  void insertAtIndex(int a[], int& numElements, int num, int index)
32  {
33      int insertNum = 0;
34      if(numElements >= CAPACITY)
35      {
36          cerr << "Array is full. Cannot insert another element." << endl;
37      }
38      else if (index > numElements)
39      {
40          cerr << "You can only insert contiguous elements in the array."  << endl;
41      }
42      else if (index > CAPACITY)
43      {
44          cerr << "The array cannot have more than " << CAPACITY << " elements." << ⏎
               endl;
45      }
46      else
47      {
48          ++numElements;
49          for (int i = index; i <= numElements; i++)
50          {
51              insertNum = a[i];
```

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52                a[i + 1] = insertNum;
53            }
54        a[index] = num;
55    }
56 }
```