C-1.3

Our solution represents the array as an STL vector v for convenience, and this solution works for vectors of any size, not just 52. For i running from the index of the last element of v down to 1, a random integer r ranging from 0 to i is generated. The ith element of v is swapped with the rth element. The function rand() returns a random integer, and we function use the fact that rand()%(i+1) generates a random number between 0 and i.

```
#include <cstdlib>                          // needed for rand()
// ...
void shuffle(vector<int>& v) {
  for(int i = v.size()-1; i > 0; i--) {     // work from back to front
    int r = rand() % (i+1);                 // random int from 0 to i
    int temp = v[i];                        // swap v[i] with v[r]
    v[i] = v[r];
    v[r] = temp;
  }
}
```