Practice Exercises
Show what is stored in the array pertaining to the following statement(s). Cross out any spots that do not belong.

```cpp
const int size = 7;
int scores[size] = {100, 73, 88, 84, 40, 97};
```
Show what is stored in the array pertaining to the following statement(s). Cross out any spots that do not belong.

```c
const int size = 7;
int scores[size] = {100, 73, 88, 84, 40, 97};
```

```
100  73  88  84  40  97
```

Redacted: 40, 97
Given the following array \( x \)

\[
\begin{array}{cccccccc}
16 & 12 & 6 & 8 & 2 & 12 & 14 & 20 \\
\end{array}
\]

Show the final contents of the above array \( x \) after all the following statements execute:

\[
i = 3; \\
x[i] = x[i] + 10.0; \\
x[i-1] = x[2 * i - 1]; \\
x[i + 1] = x[2 * i] + x[2 * i + 1];
\]
Given the following array x

```
[16 12 6 8 2 12 14 20]
```

Show the final contents of the above array x after all the following statements execute:

```c
i = 3;
x[i] = x[i] + 10.0;
x[i-1] = x[2 * i - 1];
x[i + 1] = x[2 * i] + x[2 * i + 1];
```

```
16 12 12 18 34 12 14 20
```
Given the following array

$$
\begin{array}{cccccccc}
16 & 12 & 6 & 8 & 2 & 12 & 14 & 20 \\
\end{array}
$$

Show the final contents of the above array \( x \) after all the following statements execute:

```c
for (i = 4; i < 7; i++)
    x[i] = x[i + 1];  
for (i = 2; i >= 0; i--)
    x[i + 1] = x[i];
```

$$
\begin{array}{cccccccc}
16 & 12 & 6 & 8 & 2 & 12 & 14 & 20 \\
\end{array}
$$
Given the following array

|   16 |  12 |   6 |   8 |   2 |  12 |  14 |  20 |

Show the final contents of the above array $x$ after all the following statements execute:

```plaintext
for (i = 4; i < 7; i++)
    x[i] = x[i + 1];
for (i = 2; i >= 0; i--)
    x[i + 1] = x[i];
```

|   16 |  16 |  12 |   6 |  12 |  14 |  20 |  20 |
What are the contents?

for (i = 7; i >= 0; i--)
    x[i] = 2 * i;
for (i = 7; i >= 0; i--)
    x[i] = 2 * i;

0  2  4  6  8  10  12  14
If ‘a’ is an array of size 5, 
a[5] is valid to index within the array.
If ‘a’ is an array of size 5, 
a[5] is valid to index within the array.

False
Which of the following declares an array of 10 elements and assigns the value 5.6 to the first element?

a) float numbers[9]; numbers[0] = 5.6;
b) float numbers[9]; numbers[1] = 5.6;
c) float numbers[10]; numbers[0] = 5.6;
d) float numbers[10]; numbers[1] = 5.6;
Which of the following declares an array of 10 elements and assigns the value 5.6 to the first element?

a) float numbers[9]; numbers[0] = 5.6;
b) float numbers[9]; numbers[1] = 5.6;
c) float numbers[10]; numbers[0] = 5.6;
d) float numbers[10]; numbers[1] = 5.6;

Ans:  C
char arr[] = { 'a', 'b', 'c', 'd', 'e' }; char c = arr[4];

What gets assigned into the variable c?
a) 'b'
b) 'd'
c) 'e'
d) c will be undefined
e) The above code does not compile
char arr[] = { 'a', 'b', 'c', 'd', 'e' };
char c = arr[4];

What gets assigned into the variable c?
a) 'b'
b) 'd'
c) 'e'
d) c will be undefined
e) The above code does not compile

Ans: C
Which of the following statements are true?

a) An array is a contiguous chunk of memory that can hold more than one piece of information.
b) An array must be entirely the same data type.
c) Array accesses that are out of bounds may cause your program to crash.
d) All of the above are true

e) All of the above are false
Which of the following statements are true?

a) An array is a contiguous chunk of memory that can hold more than one piece of information.
b) An array must be entirely the same data type.
c) Array accesses that are out of bounds may cause your program to crash.
d) All of the above are true

e) All of the above are false

Ans: D
char arr[] = { 'a', 'b', 'c', 'd', 'e' }; 
for( int i = 0; i < 5; i++ ){
    arr[i] = arr[4-i];
}

Which of the following is the contents of arr?

a) { 'a', 'b', 'c', 'd', 'e' } 
b) { 'e', 'd', 'c', 'b', 'a' } 
c) { 'e', 'd', 'c', 'd', 'e' } 
d) Segmentation Fault 
e) This code does not compile
char arr[] = { 'a', 'b', 'c', 'd', 'e' };
for( int i = 0; i < 5; i++ ){
    arr[i] = arr[4-i];
}
Which of the following is the contents of arr?
a) { 'a', 'b', 'c', 'd', 'e' } 
b) { 'e', 'd', 'c', 'b', 'a' } 
c) { 'e', 'd', 'c', 'd', 'e' } 
d) Segmentation Fault 
e) This code does not compile

Ans:  C
Which of the following is/are valid assignment(s) to this array?

```c
int arr[6];
I. arr[0] = 1;
II. arr[-1] = -1;
III. arr[6] = 0;
```

a) I  
b) II  
c) III  
d) I and III  
e) None of the above
Which of the following is/are valid assignment(s) to this array?

```c
int arr[6];
I.   arr[0] = 1;
II.  arr[-1] = -1;
III. arr[6] = 0;
```

a) I  
b) II  
c) III  
d) I and III  
e) None of the above

**Ans: A**
When passing an array into a function, it is passed by reference.
True or False

When passing an array into a function, it is passed by reference.

True
True or False

When passing an array into a function, ‘const’ must be used.
When passing an array into a function, ‘const’ must be used.

False
Pick One

Which of the following is true regarding passing arrays by value:

a) It is possible but rarely advisable
b) It is possible but never advisable
c) It is impossible
Which of the following is true regarding passing arrays by value:

a) It is possible but rarely advisable
b) It is possible but never advisable
c) It is impossible

Ans: C
Which of the following is/are correct function prototype(s) for a function that takes a single parameter--an integer array.

I) void countElements(int array);
II) void countElements(int array[]);
III) void countElements(int& array[]);
IV) void countElements(int array[10]);

a) I
b) II
c) III
d) IV
e) II and IV
Which of the following is/are correct function prototype(s) for a function that takes a single parameter--an integer array.

I)  void countElements(int array);
II)  void countElements(int array[]);
III) void countElements(int& array[]);
IV)  void countElements(int array[10]);

a) I
b) II
c) III
d) IV
e) II and IV

Ans:  e