

Montgomery College, CMSC 203
Worksheet 3
Module 10

Objective

- One dimensional , 2D Arrays

Questions

1) Which of the following array declarations are invalid?

- a) `int[] grades = new int[5];`
- b) `int grades[] = new int[5];`
- c) `int[] grades = { 91, 83, 42, 100, 77 };`
- d) all of the above are valid
- e) none of the above are valid

2) Which of the following is a true statement?

- a) Arrays are passed as parameters to methods like primitive types.
- b) Arrays are passed as parameters to methods like object types.
- c) Arrays cannot be passed as parameters to methods.
- d) All of the above are true.
- e) None of the above are true.

3) Suppose we have an array of String objects identified by the variable names. Which of the following for loops will *not* correctly process each element in the array.

- a) `for(int i = 0; i < names.length; i++)`
- b) `for(String name : names)`
- c) `for(int i = 0; i < names.length(); i++)`
- d) none of these will correctly process each element
- e) all of these will correctly process each element

4) Which of the following is a valid declaration for a two-dimensional array?

- a) `int[][] matrix;`
- b) `int[2] matrix;`
- c) `int[]** matrix;`
- d) `int[] matrix;`
- e) none of these are correct

5) Which of the following lines of code accesses the second element of the first array in a two-dimensional array of integers, numbers, and stores the result in a variable called num?

- a) `num = numbers[1][2];`
- b) `num = numbers[0][1];`
- c) `num = numbers.getElement(1, 2);`
- d) `num = numbers.getElement(0, 1);`
- e) none of the above are correct

Short Answer/Programming Questions:

1) Write the declaration for an array of doubles called averages that is initialized with an initializer list.

2) Write the declaration for a two-dimensional array of integers that can be thought of as a table with three rows and three columns. Assign the value 3 to the cell that is in the second row and the third column.

3) Student is a class that defines data fields and methods for an individual student. Write the declaration of an array named roster that can be used to reference 24 Student objects.

4) Write a method called `doubleSize` that accepts an integer array as a parameter and returns a reference to a new integer array that is twice as long and contains all of the elements of the first array in the same positions.

5) `Circle` is a class that has data and methods related to circles. How many `Circle` objects are created by the following declaration?

```
Circle [] shapes = new Circle[12];
```

6) Write a method that accepts an array of integers as a parameter and returns a reference to an array that contains the even numbers in the array original array. The returned array should have a size equal to the number of even numbers in the original array.

7) Write a line of code that initializes a two-dimensional array of integers using an initializer list.