6.1 Arrays

Directions: Answer the following questions in a word document. When you are done, upload the word document to GitHub. You will receive a link to the assignment.

1. Declare an array of integers containing the first five prime numbers.

2. Assume the array primes has been initialized as described in problem #1. What does it contain after executing the following loop?

```
for(int i=0; i<2; i++) {
      primes[4-i] = primes[i];
}
```

3. Assume the array primes has been initialized as described in problem #1. What does it contain after executing the following loop?

```
for(int i=0; i<5; i++) {
      primes[i]++;
}
```

4. Given the declaration
   ```
   int[] values = new int[10];
   ```

write statements to put the integer 10 into the element of the array values with the lowest and the highest valid index.

5. Declare an array called `words` that can hold ten elements of type `String`.

6. Declare an array containing two strings, "Yes", and "No".

7. Consider the following array:

```
int[] a = { 1, 2, 3, 4, 5, 4, 3, 2, 1, 0};
```

What is the value of `total` after the following loops complete?
```
A. int total = 0;
   for(int i=0; i<10; i++) { total = total + a[i]; }
```

```
B. int total = 0;
   for(int i=0; i<10; i = i + 2) { total = total + a[i]; }

C. int total = 0;
   for(int i=0; i<10; i = i + 2) { total = total + a[i]; }

D. int total = 0;
   for(int i=0; i<=10; i++) { total = total + a[i]; }

E. int total = 0;
   for(int i=0; i<10; i = 2 * i) { total = total + a[i]; }

F. int total = 0;
   for(int i=0; i>=10; i— —  { total = total + a[i]; }

G. int total = 0;
   for(int i=0; i>=10; i = i - 2) { total = total + a[i]; }

H. int total = 0;
   for(int i=0; i<10; i++) { total = a[i] - total; }
```

8. What is wrong with each of the following code segments?

```
A. int[] values = new int[10];
   for(int i=1; i<=10; i++) {
         values[i] = i*i;
   }
```

```
B. int[] values;
   for(int i=0; i<values.length; i++) {
   values[i] = i*i;
   }
```

9. Write a program that initializes an array with ten random integers and then prints four lines of output, containing:

- Every element at an even index.
- Every even element.
- All elements in reverse order.
- Only the first and last element.