Name_____ Period_____

ArrayList Worksheet

Consider the following declaration for problems 1 – 8. Assume that all problems building the ArrayList<String> start with an empty ArrayList<String>.

```
ArrayList<String> band = new ArrayList<String>();
```

1. What will band contain if the following code segment is executed?

```
band.add("Paul");
band.add("Pete");
band.add("John");
band.add("George");
band.remove(1);
```

2. What will band contain if the following code segment is executed?

```
band.add("Paul");
band.add("Pete");
band.add("John");
band.add("George");
band.remove(1);
band.add(2,"Ringo");
```

3. Using the code in question #2, what will print when this statement is executed?

```
System.out.println ("Size of the band: " + band.size());
```

4. What will band contain if the following code segment is executed?

```
band.add("Paul");
band.add("Pete");
band.add("John");
band.add("George");
band.set(1,"Ringo");
```

5. Which statement will correctly print the second element in `band`?

(A) `System.out.println(band.get(1));`
(B) `System.out.println(band.get(2));`
(C) `System.out.println(band[1]);`
(D) `System.out.println(band[2]);`
(E) `Both (A) and (C)`
(F) `Both (B) and (D)`

6. What will `band` contain if the following code segment is executed?

```
band.add("Paul");
band.add("Ringo");
band.add("John");
band.add("George");
band.add(band.remove(0));
```

7. Which statement will correctly remove the last element in `band` and store it in the variable `removed`?

```
band.add("Paul");
band.add("Ringo");
band.add("John");
band.add("George");
```

(A) `String removed = band.remove(band.size());`
(B) `String removed = band.remove(band.size()-1);`

8. Consider the following declaration.

```
ArrayList<String> recipe = new ArrayList<String>();
```

What will `recipe` contain if the following code segment is executed? (Show answer)

```
recipe.add("flour");
recipe.add("baking soda");
recipe.add("butter");
recipe.add("sugar");
recipe.add("brown sugar");
recipe.add("vanilla");
recipe.add("eggs");
recipe.add(2,"salt");
recipe.add("chocolate chips");
```

9. Which statement will correctly print `recipe`?

(A) `System.out.println(recipe);`
(B) `System.out.println(recipe.toString());`
(C) `System.out.println(recipe.toString);`
(D) `System.out.println(recipe());`
(E) `Both (A) & (B)`

10. Using the `ArrayList<String> recipe` as follows:

`[flour, baking soda, salt, butter, sugar, brown sugar, vanilla, eggs, chocolate chips]`

which statement will correctly replace "chocolate chips" with "M & M's"?

(A) `recipe.set(size(), "M & M's");`
(B) `recipe.set(size() - 1, "M & M's");`
(C) `recipe.set(recipe.size(), "M & M's");`
(D) `recipe.set(recipe.size() - 1, "M & M's");`

11. Using the `ArrayList<String> recipe` as follows:

`[flour, baking soda, salt, butter, sugar, brown sugar, vanilla, eggs, chocolate chips]`

which statement will correctly add "nuts" to the end?

(A) `recipe.set(recipe.size() - 1, "nuts");`
(B) `recipe.get(recipe.size() - 1, "nuts");`
(C) `recipe.add(remove(size() - 1));`
(D) `recipe.add("nuts");`

12. Assume that the `ArrayList<Integer> primes` has been initialized with the following `Integer` objects.

[2, 3, 5, 7, 11, 15, 17, 19]

which statement will correctly replace the `Integer` 15 with the `Integer` 13 in `primes`?

(A) `primes.set(5, "13");`
(B) `primes.set(6, 13);`
(C) `primes.set(5, 13);`

13. Assume that `primes` has been initialized with the following `Integer` objects.

[2, 3, 5, 7, 11, 13, 17, 19]

What will `primes` contain after the following code segment has executed?
`primes.add(primes.remove(0));`

(A) [3, 5, 7, 11, 13, 17, 19]
(B) [3, 5, 7, 11, 13, 17, 19, 2]
(C) [2, 3, 5, 7, 11, 13, 17, 19, 0]
(D) [19, 2, 3, 5, 7, 11, 13, 17]
(E) [19, 3, 5, 7, 11, 13, 17, 2]

14. Assume that `primes` has been initialized with the following `Integer` objects.

[2, 3, 5, 7, 11, 13, 17, 19]

What will `primes` contain after the following code segment has executed?

```
primes.add(0, primes.remove(primes.size() - 1));
```

(A) [3, 5, 7, 11, 13, 17, 19]
(B) [3, 5, 7, 11, 13, 17, 19, 2]
(C) [2, 3, 5, 7, 11, 13, 17, 19, 0]
(D) [19, 2, 3, 5, 7, 11, 13, 17]
(E) [19, 3, 5, 7, 11, 13, 17, 2]

15. Assume that `primes` has been initialized with the following `Integer` objects.

[2, 3, 5, 7, 11, 13, 17, 19]

Which of the following statements swaps the last two elements?

(A)
```
primes.add(0, primes.remove(primes.size() - 1));
```
(B)
```
primes.add(primes.size() - 2, primes.remove(primes.size() - 1));
```
(C)
```
primes.set(primes.size() - 2, primes.get(primes.size() - 1));
```
(D)
```
primes.add((primes.size() - 1));
```
(E)
```
primes.add(primes.remove(primes.size() - 2));
```

16. Assume that `primes` has been initialized with the following `Integer` objects.

[2, 3, 5, 7, 11, 13, 17, 19]

Which of the following represents `primes` after the following code has been executed?

```
for (int i = 0; i < primes.size(); i++)
      primes.add(primes.remove(primes.size() - 1 - i));
```

(A) [2, 3, 5, 7, 11, 13, 17, 19]
(B) [19, 17, 13, 11, 7, 5, 3, 2]
(C) [3, 5, 7, 11, 13, 17, 19, 2]
(D) [19, 2, 3, 5, 7, 11, 13, 15]
(E) [19, 3, 5, 7, 11, 13, 17, 2]

17. Assume that `primes` has been initialized with the following `Integer` objects.

[2, 3, 5, 7, 11, 13, 17, 19]

Which of the following represents `primes` after the following code has been executed?

```
for (int i = 0; i < primes.size(); i++)
   primes.remove(i);
```

(A) [2, 3, 5, 7, 11, 13, 17, 19]
(B) []
(C) [3, 5, 7, 11, 13, 17, 19]
(D) [2, 5, 11, 17]
(E) [3, 7, 13, 19]

18. Consider the following declaration.

```
ArrayList<Integer> numbers = new ArrayList<Integer>();
```

Assume numbers contains the following `Integer` data.

[-2, 6, 4, -1, 0, 0, 5, 10, -9, 12, -6, 10]

What will `numbers` contain after the following code segment is executed?

```
for (int j = 0; j < numbers.size(); j++)
{
      int tempNum = numbers.get(j);
      if (tempNum < 0)
            numbers.set(j, -1 * tempNum);
}
```