

CSSE 220 – Object-Oriented Software Development
Rose-Hulman Institute of Technology

Worksheet 03

Name (Print): _____ Section: _____

1. What is a 2D Array?

A 2D array stores values in *rows and columns*.

Write one example of a 2D array: _____

2. Two Dimensions

- The first dimension [] represents : _____
- The second dimension [] represents: _____

3. Declaring a 2D Array. Complete the declaration of a 10x20 int array:

```
int[][] arr = new int[_____][_____];
```

4. Accessing Elements. Given the 2D array:

```
int[][] arr = {  

    {1, 2, 3},  

    {4, 5, 6}  

};
```

Fill in the expression to print the value 5:

```
System.out.println( arr[ _____ ][ _____ ] );
```

5. 2D Array Lengths

- `arr.length` = number of _____
- `arr[0].length` = number of _____

6. Traversing a 2D Array. Complete the nested loops used to print all values:

```
for (int r = 0; r < arr._____ ; r++) {  

    for (int c = 0; c < arr[r]._____ ; c++) {  

        System.out.println( arr[ _____ ][ _____ ] );  

    }  

}
```

7. What is a HashMap?

A HashMap stores *key-value pairs*. Provide one real-world example from a key and a value pair: _____

8. Core Rules (circle the correct statement)

- Keys must be unique. (T / F)
- Values may repeat. (T / F)
- HashMap is an ordered collection. (T / F)

9. Creating a HashMap. Complete the examples shown in class:

```
HashMap<______> airportMap = new HashMap<______>();
```

```
HashMap<I_____> capitalCities = new HashMap<______>();
```

10. Common HashMap Operations. Fill in the missing method names:

Put a value: map._____ (key, value);

Get a value: map._____ (key);

Check key: map._____ (key);

Remove entry: map._____ (key);

11. Iterating Through a HashMap.

```
// Loop over keys and print values:  
for (String k : map._____()) {  
    System.out.println( k + " → " + map.get(_____) );  
}
```

12. How to Check if a Key Exists. Complete the example shown in lecture:

```
// Does the map contain the key "Spain"?  
if (capCity._____("Spain")) { };
```

13. Before You Leave

Write one question you want reviewed next class:
