Practical IB Computer Science Test

Name: _____   Date:

Arrays

Write a Java Class that will list the contents of a given array, find the minimum, maximum, mean, mode and median values. Use the file attached to the online homework for ease of coding and testing, as it includes a main method and headers. You may need to comment and uncomment the appropriate lines of code in the main method as you implement each objective of this test.

Minimum   **: Smallest value of the set**

Maximum   **: Largest value of the set**

Range   **: The difference between the maximum (biggest) and**
                         minimum (smallest) values

Mean   **: Average of all values (sum of all values / size of array)**

Median   **: the middle value; if there are two middle values,**
                         the median is their average.

Mode   **: (Single) Value that occurs most often in the set**

Work through the test from the beginning. Your program should build and grow ----- *do not* start a new program for each point. During this test, you may use any resources that you have created, but you may **not** use Internet.

<<< Please Turn Over >>>

Practical IB Computer Science Test

Instructions	*Expected Output*
1. Write a **size** method to calculate and return the *number of elements* of a given array, **rainfall**	```Rainfall in SG - Stats``` ```418 measurements```
2. Write a **min** method that returns the *smallest* value in the array	```Minimum (0.2): 0.2```
3. Write a **max** method that returns the *largest* value in the array	```Maximum (765.9): 765.9```
4. Write a **range** method that returns the *range* of an array	```Range (765.7): 765.6999999999999```
5. Write an **average** method that returns the *average* of an array	```Average(178.89): 178.89377990430637```
6. Write a **median** method that returns the *median* of an array	```Median (159.7): 159.7```
7. Write a **mode** method that returns the *mode* of an array	```Mode (127.2): 127.2```

8. Repeat all the above for a second array, **temperatures**	```Temperature in SG - Stats```
	```417 measurements```
	```Minimum (25.4): 25.4```
	```Maximum (29.5): 29.5```
	```Range (4.1): 4.100000000000001```
	```Average(27.62): 27.62565947242208```
	```Mode (27.3): 27.3```

9. Your median method must work for both *even and odd* array sizes	```Median (27.7): 27.7```

10. Using any method of your choice, format the output so that at most two decimal digits are shown.
Expected output to the right →
Ideal output below ↓
 	
```Rainfall in SG - Stats```
```418 measurements```
```Minimum   (0.2):   0.20```
```Maximum (765.9): 765.90```
```Range   (765.7): 765.70```
```Average(178.89): 178.89```
```Mode   (127.20): 127.20```
```Median (159.69): 159.70```
 	
```Temperature in SG - Stats```
```417 measurements```
```Minimum (25.4):   25.40```
```Maximum (29.5):   29.50```
```Range   (4.1):   4.10```
```Average(27.62):   27.63```
```Mode   (27.3):   27.30```
```Median   (27.7):   27.70```
	```Rainfall in SG - Stats```
	```418 measurements```
	```Minimum (0.2): 0.2```
	```Maximum (765.9): 765.9```
	```Range (765.7): 765.7```
	```Average(178.89): 178.89```
	```Mode (127.20): 127.2```
	```Median (159.69): 159.69```
	
	```Temperature in SG - Stats```
	```417 measurements```
	```Minimum (25.4): 25.4```
	```Maximum (29.5): 29.5```
	```Range (4.1): 4.1```
	```Average(27.62): 27.62```
	```Mode (27.3): 27.3```
	```Median (27.7): 27.7```