Name: _____    Date: 19/03/18

**Arrays**

Complete a Java Class that will list the contents of a given array, find the minimum, maximum, mean, mode and median values. Use the files attached to the online homework for ease of coding and testing, as it includes a main method and headers.

**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 (with the exception of the maths site below, if needed).

http://www.bbc.co.uk/schools/gcsebitesize/maths/statistics/measuresofaveragerev2.shtml

<<< Please Turn Over >>>

| Instructions | Expected Output |
|---|---|
| 1. Output your name on the screen, plus the message "Singapore Rainfall Statistics" | ```<br>Han Solo<br>Singapore Rainfall Statistics<br>``` |
| 2. Write the *size* method. It should return the number of elements of an array given as a parameter. | ```<br>Measurements   : 418<br>``` |
| 3. Write a *min* method that returns the *smallest* value in the array<br>Write a *max* method that returns the *largest* value in the array | ```<br>Minimum   (0.2): 0.2<br>Maximum (765.9): 765.9<br>``` |
| 4. Write a *range* method that returns the *range* of an array | ```<br>Range  (765.7): 765.6999999999999<br>``` |
| 5. Write an *average* method that returns the *average* of an array | ```<br>Average(178.89): 178.89377990430637<br>``` |
| 6. Write a *median* method that returns the *median* of an array | ```<br>Median  (159.7): 159.7<br>``` |
| 7. Write a *mode* method that returns the *mode* of an array | ```<br>Mode      (127.2): 127.2<br>``` |
| 8. Repeat all the above for a second array, **temperatures** | ```<br>Singapore Temperature Statistics<br>Measurements  : 417<br>Minimum (25.4): 25.4<br>Maximum (29.5): 29.5<br>Range     (4.1): 4.100000000000001<br>Average(27.62): 27.62565947242208<br>Mode      (27.3): 27.3<br>``` |
| 9. Your median method must work for both *even and odd* array sizes | ```<br>Median  (27.7): 27.7<br>``` |
| 10. Using any method of your choice, format the output so that at most two decimal digits are shown. | ```<br>Singapore Rainfall Statistics<br>Measurements   : 418<br>Minimum   (0.2):   0.20<br>Maximum (765.9): 765.90<br>Range   (765.7): 765.70<br>Average(178.89): 178.89<br>Mode   (127.20): 127.20<br>Median (159.69): 159.70<br><br>Singapore Temperature Statistics<br>Measurements  : 417<br>Minimum (25.4):  25.40<br>Maximum (29.5):  29.50<br>Range     (4.1):   4.10<br>Average(27.62):  27.63<br>Mode      (27.3):  27.30<br>Median  (27.7):  27.70<br>``` |