**Test Cases for problem 5**

**Test Case 1: Normal Input**

5

10 5 8 3 7

**Expected Output:**

* Minimum: 3
* Maximum: 10
* Median: 7
* Mean: 6.6
* Summation: 33
* Sorted Data: 3 5 7 8 10

**Test Case 2: Single Element**

1

42

**Expected Output:**

* Minimum: 42
* Maximum: 42
* Median: 42
* Mean: 42
* Summation: 42
* Sorted Data: 42

**Test Case 3: Even Number of Elements**

6

15 20 30 25 10 5

**Expected Output:**

* Minimum: 5
* Maximum: 30
* Median: 17.5
* Mean: 17.5
* Summation: 105
* Sorted Data: 5 10 15 20 25 30

**Test Case 4: All Identical Elements**

4

7 7 7 7

**Expected Output:**

* Minimum: 7
* Maximum: 7
* Median: 7
* Mean: 7
* Summation: 28
* Sorted Data: 7 7 7 7

**Test Case 5: Large Dataset**

10

100 50 30 80 60 90 20 70 40 10

**Expected Output:**

* Minimum: 10
* Maximum: 100
* Median: 55
* Mean: 55
* Summation: 550
* Sorted Data: 10 20 30 40 50 60 70 80 90 100

**Test Case 6: Already Sorted Input**

**File: test6.txt**

5

1 2 3 4 5

**Expected Output:**

* Minimum: 1
* Maximum: 5
* Median: 3
* Mean: 3
* Summation: 15
* Sorted Data: 1 2 3 4 5

**Test Case 7: Reverse Sorted Input**

5

5 4 3 2 1

**Expected Output:**

* Minimum: 1
* Maximum: 5
* Median: 3
* Mean: 3
* Summation: 15
* Sorted Data: 1 2 3 4 5

**Test Case 8: Floating Point Numbers (If Modified for double)**

5

1.5 3.2 2.8 4.0 5.1

**Expected Output:**

* Minimum: 1.5
* Maximum: 5.1
* Median: 3.2
* Mean: 3.32
* Summation: 16.6
* Sorted Data: 1.5 2.8 3.2 4.0 5.1

**Test Case 9: Negative Numbers**

5

-3 -1 -7 -5 -9

**Expected Output:**

* Minimum: -9
* Maximum: -1
* Median: -5
* Mean: -5
* Summation: -25
* Sorted Data: -9 -7 -5 -3 -1