

3. The following data are from a set of test results from a statistics class. For the data (a) find the percentile for the score of 55 and (b) find P80.

39, 71, 60, 57, 47, 47, 74, 55, 63, 60, 65, 96, 38, 57, 49, 89, 20, 73, 91, 85, 79, 53, 93, 82, 59, 76, 67, 64, 69, 40, 100, 59, 26, 74, 9, 75

(a) Sort the data. Find the number of values below 55.

L1	L2	L3	1
38			
40			
47			
47			
49			
53			
55			

L(10) = 55

Use the formula below:

$$\text{Percentile Value} = \frac{(\text{Number below } x)}{(\text{Total Number})} * 100 \text{ (round off)}$$

$$\text{Percentile Value} = \frac{10}{36} * 100 \sim 27.8$$

28<sup>th</sup> Percentile

(b) Data is in sorted order. Use the formula for the locator L.

$$L = \frac{(\text{Kth percentile})}{100} * n$$

$$L = \frac{80}{100} * 36 \quad L = 28.8 \text{ (since L contains a fraction, round up. See 'Note' below.)}$$

L is the 29<sup>th</sup> value in the list.

P<sub>80</sub> is 79

L1	L2	L3	1
73			
74			
74			
75			
76			
79			
82			

L(29) = 79

**Note:**  
 If L contains a fraction then round up.  
  
 If L is a whole number, then find the Mid-Range of the value for L and the value for (L+1).