

**1. Problem**

A continuous random variable  $X$  was measured 9 times. The sorted data are shown below, along with each datum's index.

$i$	$x$
1	50.003
2	50.045
3	50.404
4	50.411
5	50.686
6	50.799
7	50.917
8	51.765
9	52.050

The total of the measurements is 457.08.

- Determine the percentile rank of the value 50.917. In other words, determine what percent of data are less than or equal to 50.917.
- Determine the datum corresponding to a percentile rank of 1. In other words, determine  $x$  such that 100% of the data are less than or equal to  $x$ .
- Determine the mean of the measurements.
- Determine the median of the measurements.

**2. Problem**

A continuous random variable  $X$  was measured 30 times. The sorted data are shown below.

94.352	100.517	105.579	106.461	108.373	122.275
123.399	124.990	126.490	129.271	134.950	143.016
144.260	145.752	149.057	149.401	149.605	152.991
153.478	156.021	157.681	157.880	160.777	160.915
162.116	162.930	165.293	165.612	167.331	168.803

The total of the measurements is 4249.576.

- (a) Determine the percentile rank of the value 165.293. In other words, determine what percent of data are less than or equal to 165.293.
- (b) Determine the datum corresponding to a percentile rank of 0.633. In other words, determine  $x$  such that 63.3% of the data are less than or equal to  $x$ .
- (c) Determine the mean of the measurements.
- (d) Determine the median of the measurements.