

**1. Problem**

A continuous random variable  $X$  was measured 8 times. The sorted data are shown below, along with each datum's index.

$i$	$x$
1	20.043
2	20.178
3	20.227
4	39.698
5	45.039
6	55.320
7	59.546
8	59.591

The total of the measurements is 319.642.

- (a) Determine the percentile rank of the value 59.591. In other words, determine what percent of data are less than or equal to 59.591.
- (b) Determine the datum corresponding to a percentile rank of 0.375. In other words, determine  $x$  such that 37.5% of the data are less than or equal to  $x$ .
- (c) Determine the mean of the measurements.
- (d) Determine the median of the measurements.

**2. Problem**

A continuous random variable  $X$  was measured 18 times. The sorted data are shown below.

21.810	21.882	22.040	22.057	22.100	22.137
22.193	22.206	22.397	22.530	22.628	22.648
22.650	22.656	22.688	23.050	23.076	23.185

The total of the measurements is 403.933.

- (a) Determine the percentile rank of the value 22.193. In other words, determine what percent of data are less than or equal to 22.193.
- (b) Determine the datum corresponding to a percentile rank of 0.222. In other words, determine  $x$  such that 22.2% of the data are less than or equal to  $x$ .
- (c) Determine the mean of the measurements.
- (d) Determine the median of the measurements.