

**1. Problem**

A continuous random variable  $X$  was measured 7 times. The sorted data are shown below, along with each datum's index.

$i$	$x$
1	77.718
2	92.739
3	93.383
4	95.276
5	99.918
6	103.975
7	104.728

The total of the measurements is 667.737.

- (a) Determine the percentile rank of the value 103.975. In other words, determine what percent of data are less than or equal to 103.975.
- (b) Determine the datum corresponding to a percentile rank of 0.714. In other words, determine  $x$  such that 71.4% 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 63 times. The sorted data are shown below.

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49.805	60.832	69.189	72.783	73.518	76.477	76.923	78.061	81.479
84.635	85.254	85.447	85.964	88.593	89.477	90.473	91.231	91.896
92.032	94.026	94.914	96.365	96.798	100.943	102.581	103.080	103.244
103.596	104.436	105.153	105.639	106.869	107.405	108.894	110.836	111.713
111.965	112.403	113.359	113.544	114.025	115.753	116.135	117.431	117.451
117.452	117.638	118.069	118.201	118.343	118.561	119.959	120.002	120.259
121.530	122.920	124.308	124.512	124.716	124.733	126.171	126.411	127.518

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The total of the measurements is 6503.93.

- (a) Determine the percentile rank of the value 120.259. In other words, determine what percent of data are less than or equal to 120.259.
- (b) Determine the datum corresponding to a percentile rank of 0.698. In other words, determine  $x$  such that 69.8% of the data are less than or equal to  $x$ .
- (c) Determine the mean of the measurements.
- (d) Determine the median of the measurements.