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	38.254
2	40.337
3	47.983
4	53.644
5	56.347
6	59.701
7	64.538
8	65.309

The total of the measurements is 426.113.

- (a) Determine the percentile rank of the value 65.309. In other words, determine what percent of data are less than or equal to 65.309.
- (b) Determine the datum corresponding to a percentile rank of 0.625. In other words, determine x such that 62.5% 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 72 times. The sorted data are shown below.

90.034	90.110	90.125	90.129	90.226	90.342	90.497	90.603
90.733	90.864	91.089	91.848	91.892	91.961	92.097	92.128
92.934	93.098	93.913	93.924	94.543	94.671	94.932	95.271
95.647	95.689	95.722	96.075	96.129	96.168	96.466	96.796
98.733	99.022	99.038	99.039	99.434	100.767	100.972	101.114
101.271	101.440	101.525	101.712	102.237	102.282	104.182	104.301
105.561	105.893	106.402	106.841	108.141	108.278	108.322	109.069
109.285	109.351	109.505	109.700	109.756	109.762	109.765	109.795
	90.733 92.934 95.647 98.733 101.271 105.561	90.733 90.864 92.934 93.098 95.647 95.689 98.733 99.022 101.271 101.440 105.561 105.893	90.73390.86491.08992.93493.09893.91395.64795.68995.72298.73399.02299.038101.271101.440101.525105.561105.893106.402	90.733 90.864 91.089 91.848 92.934 93.098 93.913 93.924 95.647 95.689 95.722 96.075 98.733 99.022 99.038 99.039 101.271 101.440 101.525 101.712 105.561 105.893 106.402 106.841	90.733 90.864 91.089 91.848 91.892 92.934 93.098 93.913 93.924 94.543 95.647 95.689 95.722 96.075 96.129 98.733 99.022 99.038 99.039 99.434 101.271 101.440 101.525 101.712 102.237 105.561 105.893 106.402 106.841 108.141	90.733 90.864 91.089 91.848 91.892 91.961 92.934 93.098 93.913 93.924 94.543 94.671 95.647 95.689 95.722 96.075 96.129 96.168 98.733 99.022 99.038 99.039 99.434 100.767 101.271 101.440 101.525 101.712 102.237 102.282 105.561 105.893 106.402 106.841 108.141 108.278	90.733 90.864 91.089 91.848 91.892 91.961 92.097 92.934 93.098 93.913 93.924 94.543 94.671 94.932 95.647 95.689 95.722 96.075 96.129 96.168 96.466 98.733 99.022 99.038 99.039 99.434 100.767 100.972 101.271 101.440 101.525 101.712 102.237 102.282 104.182 105.561 105.893 106.402 106.841 108.141 108.278 108.322

The total of the measurements is 7111.548.

- (a) Determine the percentile rank of the value 109.795. In other words, determine what percent of data are less than or equal to 109.795.
- (b) Determine the datum corresponding to a percentile rank of 0.5. In other words, determine x such that 50% of the data are less than or equal to x.
- (c) Determine the mean of the measurements.
- (d) Determine the median of the measurements.