

1. Problem

A continuous random variable X was measured 12 times. The sorted data are shown below, along with each datum's index.

i	x
1	33.793
2	33.859
3	34.485
4	35.256
5	37.884
6	38.888
7	39.625
8	41.054
9	41.369
10	45.096
11	46.391
12	57.322

The total of the measurements is 485.022.

- Determine the percentile rank of the value 41.054. In other words, determine what percent of data are less than or equal to 41.054.
- Determine the datum corresponding to a percentile rank of 0.417. In other words, determine x such that 41.7% 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 81 times. The sorted data are shown below.

20.082	20.143	20.165	20.203	20.310	20.357	20.374	20.385	20.396
20.463	20.480	20.506	20.556	20.587	20.608	20.675	20.684	20.801
20.899	20.950	21.049	21.095	21.121	21.125	21.170	21.263	21.302
21.454	21.584	21.651	21.843	21.912	21.936	22.074	22.134	22.181
22.340	22.340	22.448	22.575	22.594	22.726	22.867	22.874	22.984
23.051	23.059	23.095	23.241	23.249	23.325	23.411	23.481	23.495
23.495	23.576	23.588	23.658	23.667	23.702	23.770	23.773	23.830
23.867	24.027	24.135	24.217	24.362	24.448	24.621	24.638	24.918
25.607	25.826	25.851	25.878	26.454	26.564	27.030	27.660	29.004

The total of the measurements is 1839.839.

- (a) Determine the percentile rank of the value 23.658. In other words, determine what percent of data are less than or equal to 23.658.
- (b) Determine the datum corresponding to a percentile rank of 0.938. In other words, determine x such that 93.8% of the data are less than or equal to x .
- (c) Determine the mean of the measurements.
- (d) Determine the median of the measurements.