

1. Problem

A continuous random variable X was measured 10 times. The sorted data are shown below, along with each datum's index.

| i | x |
|-----|--------|
| 1 | 70.005 |
| 2 | 70.167 |
| 3 | 70.762 |
| 4 | 73.005 |
| 5 | 77.524 |
| 6 | 83.296 |
| 7 | 87.540 |
| 8 | 89.353 |
| 9 | 89.457 |
| 10 | 89.548 |

The total of the measurements is 800.657.

- Determine the percentile rank of the value 73.005. In other words, determine what percent of data are less than or equal to 73.005.
- 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 35 times. The sorted data are shown below.

| | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|
| 80.001 | 80.001 | 80.017 | 80.060 | 80.074 | 80.131 | 80.406 |
| 80.413 | 80.464 | 80.803 | 80.883 | 80.895 | 80.936 | 81.007 |
| 81.143 | 81.298 | 81.566 | 81.622 | 81.622 | 81.671 | 81.691 |
| 82.077 | 82.146 | 82.277 | 82.346 | 82.396 | 82.576 | 82.648 |
| 82.710 | 82.719 | 82.888 | 82.911 | 82.929 | 82.958 | 82.963 |

The total of the measurements is 2853.248.

- (a) Determine the percentile rank of the value 81.691. In other words, determine what percent of data are less than or equal to 81.691.
- (b) Determine the datum corresponding to a percentile rank of 0.2. In other words, determine x such that 20% of the data are less than or equal to x .
- (c) Determine the mean of the measurements.
- (d) Determine the median of the measurements.