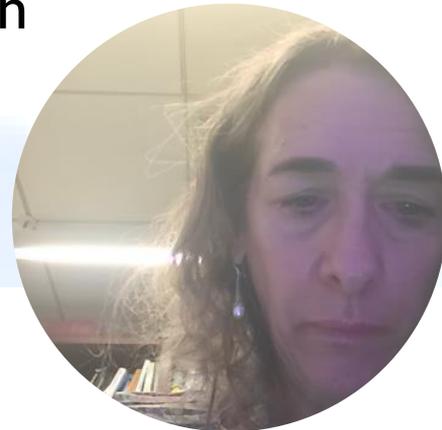


V3 - Descriptive Statistics

Part 2

Course: Statistical Testing & Regression
Dr. Renee Clark
Swanson School of Engineering
Industrial Engineering
University of Pittsburgh



Descriptive Statistics – Part 2

- ❑ Range
- ❑ Interquartile range
- ❑ Percentiles



Other Descriptive Statistics for Variability

Range: simplest

- Difference b/t largest and smallest data points.
- • Data: 2, 4, 7, 10, 15, 17, 18, 19, 19, 56
- Range: 56 - 2 = 54
- Extremely sensitive to outliers

Interquartile Range (IQR)

- ✓ Less sensitive to outliers (more robust)
- Amount of spread of “middle 50%” of data
 - Order data points & identify middle
 - • Data: 2, 4, 7, 10, 15, | 17, 18, 19, 19, 56 $n=10$
 - $Q_1 = \text{median of lower half} = \underline{7}$
 - $Q_3 = \text{median of upper half} = \underline{19}$
 - $IQR = Q_3 - Q_1 = 19 - 7 = \underline{12}$

Same set of data

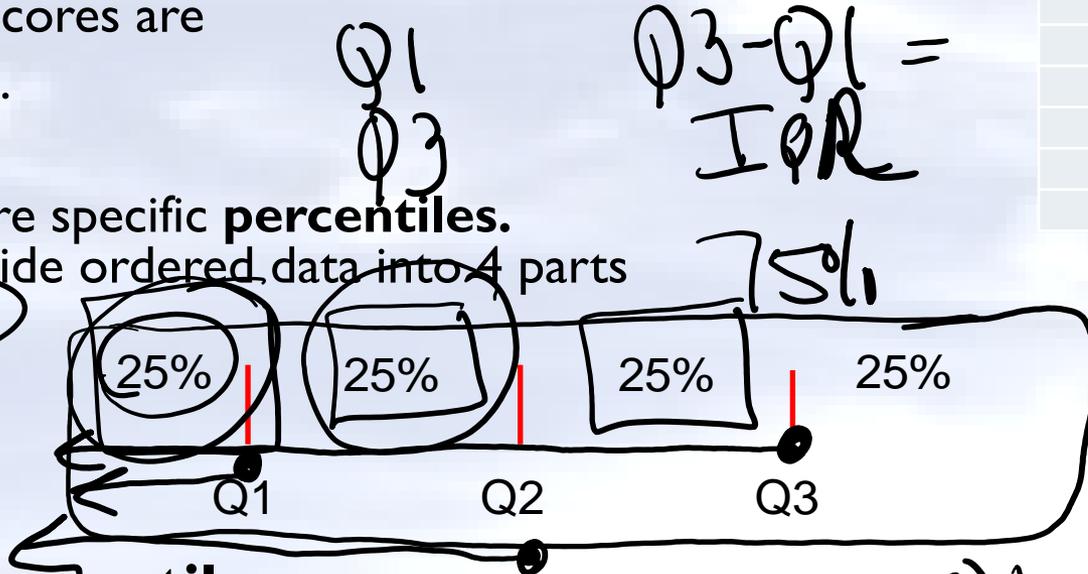


Percentile

If your exam score is 80th **percentile**, then 80% of exam scores are Below yours.

Quartiles are specific **percentiles**.

Quartiles divide ordered data into 4 parts having same n .



| Exam |
|------|
| 100 |
| 95 |
| 93 |
| 92 |
| 87 |
| 85 |
| 81 |
| 80 |
| 79 |
| 75 |

$n=10$
both percentile

$$\frac{8}{10} = 80\%$$

- **Q1: first quartile**
 - 25% of data points *below* this point
- **Q3: third quartile**
 - 75% of data points *below* this point
- **Q2: 50%**
 - 50% of data points *below* this point

$$Q3 - Q1 = 75\% - 25\% = 50\%$$





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THE END

