

Exercise walk-through

1.7

Summary Statistics for a Quantitative Variable

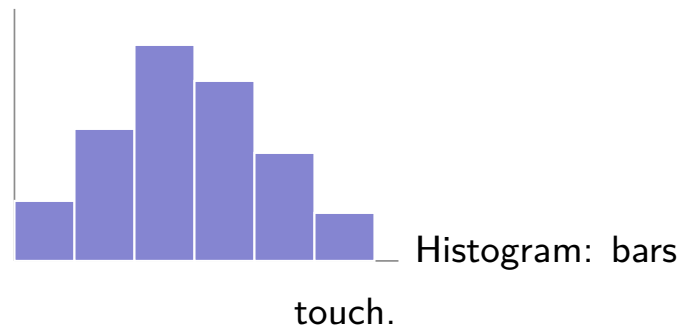
AP Statistics

Displaying quantitative data

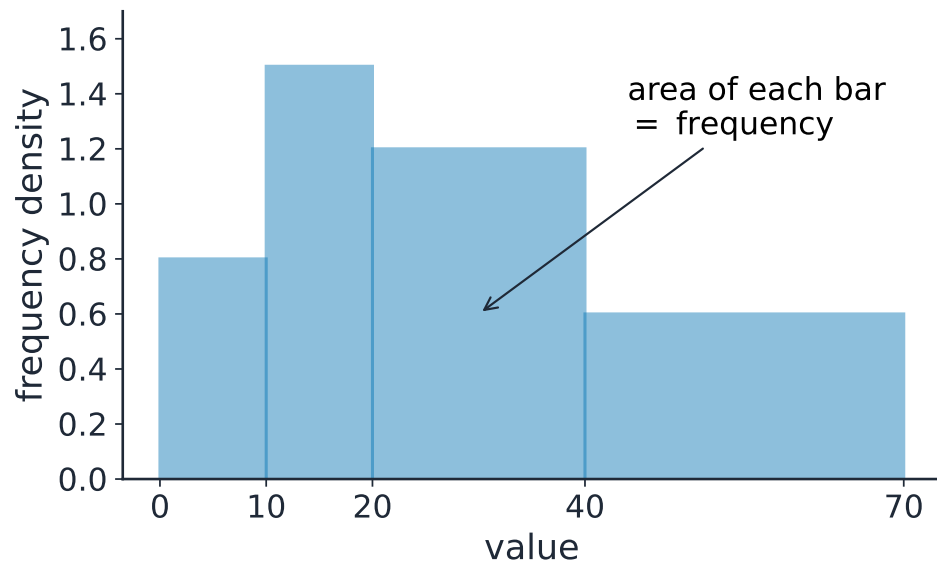
Show *where numbers fall on a scale*:

- a **dotplot** or **stem-and-leaf** keeps every value
- a **histogram** groups values into **bins**
- an **ogive** reads off **percentiles**

Histogram bars **touch** (a number scale) – the visual difference from a bar chart.



Representing a Quantitative Variable with Graphs



On a histogram with unequal class widths the bar area is the frequency

Exercises 2.1-2.3

2.1 Find the mean of $\{3, 5, 7, 9\}$. [2]

2.2 Find the median of $\{2, 6, 4, 8, 10\}$. [2]

2.3 State which measures of center and spread resist outliers. [1]

Exercises 2.1-2.3

2.1 Find the mean of $\{3, 5, 7, 9\}$.

[2]

2.1

- $$\bar{x} = \frac{3 + 5 + 7 + 9}{4} = \frac{24}{4} = 6$$

2.2 Find the median of $\{2, 6, 4, 8, 10\}$.

[2]

2.2

- ordered: 2, 4, 6, 8, 10; the middle value is 6

2.3 State which measures of center and spread resist outliers.

[1]

2.3

- the median (center) and the IQR (spread)

Exercises 3.1-3.2

3.1 The interquartile range equals

[1]

☐

A $\text{max} - \text{min}$

B $Q_3 - Q_1$

C $\text{mean} - \text{median}$

D $Q_1 - Q_3$

3.2 Which of these is resistant to outliers?

[1]

☐

A the mean

B the standard deviation

C the median

D the range

Exercises 3.1-3.2

3.1 The interquartile range equals

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A $\text{max} - \text{min}$

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D $Q_1 - Q_3$

3.1 B

- $Q_3 - Q_1$.

3.2 Which of these is resistant to outliers?

[1]

☐

A the mean

B the standard deviation

C the median

D the range

3.2 C

- the median.

Exercise 3.3 (a)

3.3 For the data $\{4, 8, 6, 10, 12\}$:

(a) find the mean.

[2]

Exercise 3.3 (a)

3.3 For the data $\{4, 8, 6, 10, 12\}$:

(a) find the mean.

[2]

(a)

$$\bullet \frac{4 + 8 + 6 + 10 + 12}{5} = \frac{40}{5} = 8$$

Exercise 3.3 (b)

3.3 For the data $\{4, 8, 6, 10, 12\}$:

(b) find the median.

[1]

Exercise 3.3 (b)

3.3 For the data $\{4, 8, 6, 10, 12\}$:

(b) find the median.

[1]

(b)

- ordered 4, 6, 8, 10, 12
- median 8

Exercise 3.3 (c)

3.3 For the data $\{4, 8, 6, 10, 12\}$:

(c) find the range.

[1]

Exercise 3.3 (c)

3.3 For the data $\{4, 8, 6, 10, 12\}$:

(c) find the range.

[1]

(c)

- $12 - 4 = 8$