5.2 Descriptive measures

Name: _____ Class: _____ Date: _____ **Total: 14 marks**

KEY WORDS mean • median • standard deviation

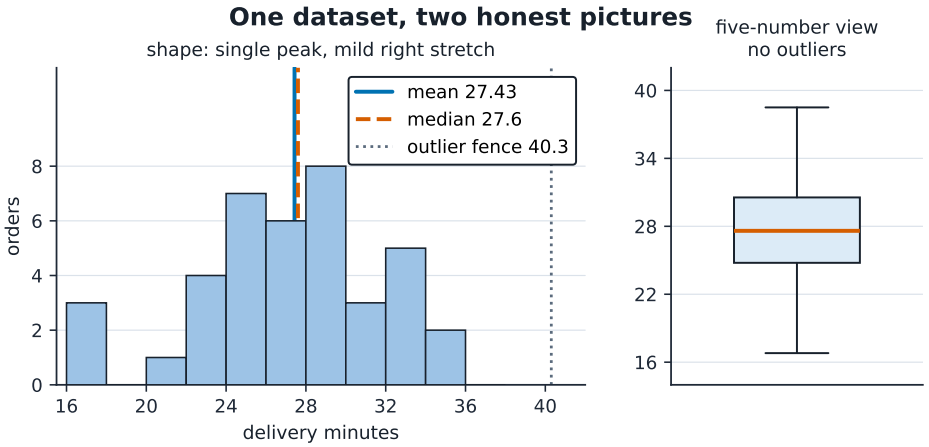
Objective

Compute and interpret centre and spread; detect shape; handle outliers responsibly; keep charts honest.

1 Key knowledge and worked examples

■ **Four questions for any dataset**

Centre (**mean** vs **median**), spread (**standard deviation** vs IQR), shape, outliers – reported together. The mean follows tails; the median resists them; the 1.5×IQR fence detects but never convicts.



One dataset, two honest pictures

■ **Worked example. The course dataset**

Mean 27.43, median 27.6, sd 4.91, quartiles 24.5/27.6/30.9, IQR 6.3, fences 15.0 and 40.3 – the 38.5 maximum stays inside. Mistype it as 168: mean jumps to 30.43, sd to 22.0, the median moves 0.05, and the fence catches it ✓.

2 Practice

A second shop's 30 delivery times: sum 900.0; squared deviations from the mean 512.0; sorted, the 15th and 16th values are 28.4 and 28.8; quartiles 24.0 and 33.0; maximum 41.2.

2.1 Compute the mean, median, sd and IQR. [4]

2.2 Apply the 1.5×IQR rule: is 41.2 an outlier? Show the fences. [2]

2.3 The slowest delivery is traced to a road closure. What are the three defensible options, and which is NOT defensible? [3]

2.4 A slide shows these times on an axis starting at 24. In two lines, what is wrong and what are the two honest fixes? [2]

2.5 The shop's mean (30.0) exceeds its median (28.6). In two lines, what does that gap say about the shape, and which average should the advert quote – with what caveat? [3]