REVISION GUIDE

Statistics Revision Guide

A fuller printable guide to descriptive statistics, centre measures, spread measures, and interpretation habits that help prevent misleading summaries.

QUICK OVERVIEW

Category: statistics data

Includes 4 related guide pages.

Links back to 6 calculator tools.

FORMULA HIGHLIGHTS

Mean

mean = sum of values / number of values

Z-score

z = (x - mean) / standard deviation

WHAT THIS PACK COVERS

- Mean, median, mode, range, weighted average, variance, standard deviation, and z-score in one revision pack.
- Short interpretation notes to keep centre and spread visible together.
- Worked examples showing when different summary measures disagree.

CORE FORMULAS

- Mean = sum of values / number of values
- Weighted average = sum(value x weight) / sum(weights)
- Range = maximum - minimum
- Standard deviation = sqrt(variance)
- z = (x - mean) / standard deviation

WHEN TO USE WHICH MEASURE

- Use mean for arithmetic centre when all values should contribute equally.
- Use median when outliers may distort the mean.
- Use weighted average when observations do not carry equal importance.
- Use standard deviation when the consistency of the data matters.
- Use z-score when you want to place one value relative to the rest.

WORKED EXAMPLE: CENTRE VERSUS SPREAD

Two datasets can share a mean but show very different standard deviations. This is the core reason centre and spread should usually be reported together rather than separately.

WORKED EXAMPLE: WEIGHTING CHANGES THE RESULT

A weighted average changes the headline result whenever some observations represent more quantity, importance, or volume than others. This is one of the most common places a simple mean becomes misleading.

COMMON MISTAKES

- Using a simple mean instead of a weighted average.
- Reporting the mean alone when the distribution is skewed.
- Confusing variance with standard deviation.
- Reading a z-score without checking the underlying centre and spread first.

BEST OFFLINE USE

Keep this pack nearby for coursework revision, quick worksheet checking, and any situation where you want the main descriptive-statistics relationships in one printable place.