

Statistical Analysis: worked examples

HSC Mathematics Standard 2

These examples show assessable skills, not an official HSC topic weighting or prediction. The 2024 NSW syllabuses have their first HSC examination in 2027; students sitting the 2026 HSC continue under the applicable 2017 syllabus.

Worked example 1 | 2 marks

Catalog reference: std2_cssa25_capture_recapture | seed 41001 | mapping std2-s2-2

Green frog population

Sam tags 160 frogs. A later sample of 220 frogs contains 32 tagged frogs.

(a) Estimate the total frog population using capture-recapture. [2 marks]

Answer: 1100

Capture Recapture: 8/55

Proportion: 1100

Worked example 2 | 2 marks

Catalog reference: std2_bar25_exactly_one_win | seed 41001 | mapping std2-s2-4

Two football matches

A team has a 20% chance of winning each game. Outcomes of successive games are independent.

(a) Calculate the probability that the team wins exactly one of its next two games. [2 marks]

Answer: 8/25

Multi Stage Outcomes: 2

Probability Sum: 8/25

Worked example 3 | 2 marks

Catalog reference: std2_asc25_normal_empirical_interval | seed 41001 | mapping std2-s5-1

Basketball scores

Game scores are normally distributed with mean 122 and standard deviation 2. What percentage lie between 118 and 124?

(a) Find the percentage using the empirical rule. [2 marks]

Answer: 163/2

Standard Deviation Interval: [-2,1]

Normal Probability: 163/2

Source and methodology

Examples are deterministic curriq catalog generations from existing QDSL archetypes at the published fixed seed. The generator copies only student-facing prompts, mark allocations, topic mappings, display tables or options, checked answers and marking-path results into this resource.

Official syllabus source:

<https://curriculum.nsw.edu.au/learning-areas/mathematics/mathematics-standard-11-12-2024/overview/course>

Teacher verification note: check the mathematics, notation, permitted technology and syllabus fit for your cohort before classroom or assessment use.