

Statistical Analysis: worked examples

HSC Mathematics Advanced

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: adv_cssa20_normal_mean_from_z_scores | seed 41001 | mapping adv-s3-1

Recover a normal mean

A normally distributed set has score 10 at $z=-2$ and score 22 at $z=1$. Calculate the mean.

(a) Find the mean of the scores. [2 marks]

Answer: 18

Z Score Difference: 4

Z Score Formula: 18

Worked example 2 | 2 marks

Catalog reference: adv_cssa20_conditional_dice_observed_number | seed 41001 | mapping adv-s1-3

A number observed in a conditioned dice sum

Two ordinary dice are rolled and their sum is 7. Find the probability that 5 appeared at least once.

(a) Find the conditional probability. [2 marks]

Answer: $\frac{1}{3}$

Conditional Sample Space: 6

Count Favourable Outcomes: 2

Worked example 3 | 1 marks

Catalog reference: adv_pem23_q12a_first_red_probability | seed 41001 | mapping adv-s1-1

Drawing coloured balls

A bag contains 5 red and 8 black balls. Two are drawn without replacement. Find the probability that the first is red.

(a) Find the probability. [1 mark]

Answer: $\frac{5}{13}$

Single Draw Probability: $\frac{5}{13}$.

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-advanced-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.