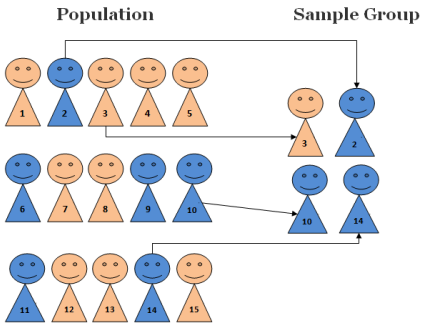
Week 14/15
Term 4
2023

HAWKER COLLEGE
Engage | Inspire | Achieve

Learning Brief
SMM4

Goals



This fortnight we are going to:

- Understand the concept of a random sample discuss sources of bias in samples, and procedures to ensure randomness
- Understand the concept of the sample proportion $\hat{p}$ as a random variable whose value varies between samples, and the formulas for the mean p and the standard deviation $\sqrt{\frac{p(1-p)}{n}}$ of the sample proportion $\hat{p}$
- The concept of a confidence interval estimates for a parameter associated with a random variable
- Use the approximate confidence interval as an interval estimate for population means and proportions
- Define the approximate margin of error

Theoretical Components

Make notes on the following chapters:

Reasoning and Data

- 6.6 Confidence limits

Sampling Distribution:

- https://onlinestatbook.com/2/sampling_distributions/samp_dist_mean.html
- https://onlinestatbook.com/2/sampling_distributions/samp_dist_meanM.html
- https://onlinestatbook.com/2/sampling_distributions/samplingdist_diff_means.html

Practical Components

Do the following questions:
Organise your solutions neatly in your exercise book.

Chapter 6 of Reasoning and Data (pdf – Google Classroom)

- 6d: 2, 4, 5
- 6e: 1-21, 24-28, 31

Mathspace

Use Chapter reviews for revision.

Investigation

Prepare a two-sided handwritten A4 summary sheet for your exam.

Other

Fun fact: The 68-95-99.7 rule is a handy guide for remembering the percentage of values that lie within an interval estimate in a normal distribution: 68%, 95%, and 99.7% of the values lie within one, two, and three standard deviations of the mean, respectively.