

Goals

$$P(A/B) = \frac{P(A \cap B)}{P(B)}$$

$$P(B/A) = \frac{P(A \cap B)}{P(A)}$$

By the end of this week, you should be able to:

- Determine the probability of simple and compound events
- Use tree diagrams, Venn diagrams and Karnaugh maps to determine the sample space and probability of compound events
- Use addition principle to compute probabilities of mutually exclusive (and non-mutually exclusive or inclusive) events.
- Understand and use the definition of conditional probability.
- Use the relative frequency approach to assigning probability to find the conditional probability of an event from a two-way table.
- Use the multiplication rule to find the probability of the intersection of two events.
- Use the multiplication rule to find the probability of the intersection of more than two events.
- Determine if two events are independent.

Theoretical Components

You will require Chapter 11 of Quest Mathematical Methods 11 (pdf Google Drive):

- Read through Section 11C. Study and make notes on worked examples 9-11.
- Read through Section 11D. Study and make notes on worked examples 12-17.
- Read through Section 11E. Study and make notes on worked examples 18-20.
- Read through Section 11F on Conditional Probability. Study and make notes on Examples 21-24.

Conditional Probability, make notes:

<http://www.bbc.co.uk/schools/gcsebitesize/maths/statistics/probabilityhirev3.shtml>

<https://onlinecourses.science.psu.edu/stat414/node/33>

- Read through Section 11B&C on Independent Events. Study and make notes on Examples 29-33.

Practical Components

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

Ex 11C: All even numbers

EX 11D: All odd numbers

EX 11E: 5, 8, 10, 12-16

EX 11F: 1, 3, 9, 10 -12, 14, 15, 17, 19, 21

EX 11H: 1a, e, 2, 3, 5, 9, 16, 18

EX12H: Questions 1-21

Complete the www.mathspace.co tasks set for this week:

- **PROBABILITY**

Investigation

In-Class this week

QFO

Quiz/Forum/Other

In **Week 6** you are to sit an **In-Class Task** worth 20% (with your weekly investigations) in your double line. It is an **“open book”** task given under test conditions. You will be allowed to bring in any of your notes and worked exercises since Week 1 and, of course, your CAS calculator.