

Goals



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

- Use Pascal's triangle and its properties.
- Use counting principles to solve problems involving numerical values for n and r .
- Understand the fundamentals of probability (review)
- Define experiment, outcome, event, probability and equally likely.
- Recognize the difference between outcomes that are equally likely and not equally likely to occur.
- Examine the sample space, using tree and lattice diagrams, and probabilities for experiments.

Theoretical components

Review of the fundamentals of probability:

- review probability as a measure of 'the likelihood of occurrence' of an event
- review the probability scale: $0 \leq P(A) \leq 1$ for each event A , with $P(A) = 0$ if A is an impossibility and $P(A) = 1$ if A is a certainty
- review the rules: $P(A') = 1 - P(A)$ and $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

Read through Section 12H on Applications to Probability (pdf Google Drive)

Study and make notes on Examples 26 -29.

Watch these videos:

https://www.khanacademy.org/math/probability/probability-and-combinatorics-topic/probability_combinatorics/v/events-and-outcomes-3

https://www.khanacademy.org/math/probability/probability-and-combinatorics-topic/probability_combinatorics/v/getting-exactly-two-heads-combinatorics

https://www.khanacademy.org/math/probability/probability-and-combinatorics-topic/probability_combinatorics/v/probability-using-combinations

Practical components

There are two tasks on www.mathspace.co for you to complete for this week.

- Further Pascal's Triangle Practice
- Probability

You will require Chapter 12 of Maths Quest 11 Mathematical Methods (pdf Google Drive)
Do the following questions

- EX 12H: Questions 1-19

Investigation

1. Aaron makes a guess as to which 2 of 8 swimmers will come first and second in a race. What is the probability that his guess will be right?
2. Ten people randomly seat themselves about a circular table. What is the probability that 4 particular people will be sitting next to each other?
3. A committee of 4 people is to be formed by choosing members from a group of 6 men and 4 women. What is the probability that the committee will consist of 2 men and 2 women?
4. Of 50 people surveyed, 35 played tennis and 26 played netball. Everyone surveyed played at least one of these sports.
 - a How many people played both netball and tennis?
 - b If one person is selected at random, what is the probability that:
 - i he/she plays tennis only?
 - ii he/she plays netball?
 - iii he/she plays tennis, given that he/she also plays netball? (Use a Venn Diagram)

QFO

Quiz/Forum/Other

In **Week 5** you are to sit an **In-Class Task** worth 15%. It is an open book task given under test conditions. You will be allowed to bring in any of your notes and worked exercises from Week 1 to 4 inclusive and, of course, your calculator. More information to come.