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Goals

By the end of this week, you should be able to:
- Understand the addition and multiplication principles for counting
- Compute number of possible arrangements using permutation
- Develop an understanding of factorial notation and apply it to calculating permutations

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Review – are you able to:
- Describe the number system and recognise the different number types by notations
- Define a set, subset and universal set
- Draw a Venn Diagram to represent one or more sets
- Understand the basic rules/notations used in writing intervals?

Superheroes!
Who's Got It All?

Source: creatley.com

Theoretical Components

View the following websites and make notes:

Counting Principles:
http://www.coolmath.com/algebra/20-combinatorics/01-counting-principals-01

https://www.khanacademy.org/math/probability/probability-and-combinatorics-topic/permutations_and_combinations/v/permutations

Practice Questions:
https://www.khanacademy.org/math/probability/probability-and-combinatorics-topic/permutations_and_combinations/e/permutations_1

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Number types and notations:
http://www.mathsisfun.com/sets/number-types.html

Sets, Subsets and Venn Diagrams:
http://www.mathsisfun.com/sets/sets-introduction.html
http://www.mathsisfun.com/sets/venn-diagrams.html

Interval notations:
http://www.mathsisfun.com/sets/intervals.html

Surds:
http://www.mathsisfun.com/surds.html

http://www.mathsteacher.com.au/year9/ch07_surds/06_oper/operations.htm

Practical Components

Do the following questions:
Organise your solutions neatly in your exercise book:
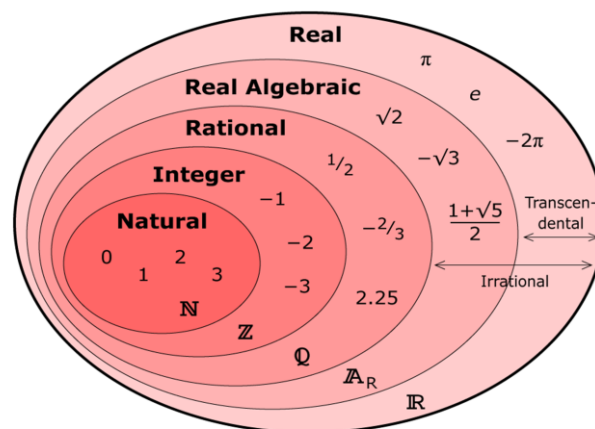You will require Chapter 12 of Maths Quest 11 Mathematical Methods (pdf - Google Classroom)

EX 12A: 1– 6, 10 –15
EX 12B: 1, 3, 5, 7, 9, 10, 18, and 19
EX 12C: 6 –10

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Attempt these questions over the next three weeks:
See handout (online pdf) – Set Notation
Exercise 2A and 2B

QFO
Quiz/Forum/Other

**Week 2
Term 1
2024**

**Learning Brief
SMM1: Counting
and Probability**

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Investigation

Complete the Investigation for Jacqueline or Jenny to check.

PART A: Prime factorisation

View the following website and investigate prime factors, greatest common factor and lowest common multiple.

http://www.mathplayground.com/factortrees.html

Answer the following, showing working:
What is the prime factorisation of 84?
What is the prime factorisation of 72?
What are the GCF and the LCM of 84 and 72?

PART B: Venn diagram

A study was made of 200 students to determine what TV shows they watched.

- 22 students do not watch any TV shows
- 73 students watch only The Crown
- 136 students watch The Crown
- 14 students watch only Legacies and Brooklyn Nine-Nine
- 31 students watch only The Crown and Brooklyn Nine-Nine
- 63 students watch Legacies
- 135 students do not watch Brooklyn Nine-Nine

Construct a Venn diagram and use this to show the number of students who watch all three programs. Show appropriate working.

Superheroes!
Who's Got It All?

Super Powers
Super Rich
?
Genius

creately