Week 1/2
Term 1
2019

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Learning Brief
SMM1: Counting and Probability

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

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?

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

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

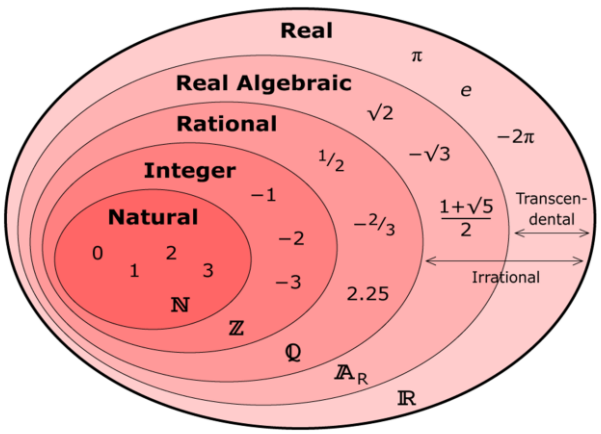
Attempt this quiz:

http://wps.pearsoned.com.au/nsm9_5153/20/5200/1331442.cw/-/1331444/index.html

Attempt these questions:

- See handout – Set Notation

Exercise 2A and 2B



QFO

Quiz/Forum/Other

There is a task on www.mathspace.co for you to complete.

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Investigation

Complete the investigation for Jacqueline 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 (Specialist Methods)

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 Pretty Little Liars
- 136 students watch Pretty Little Liars
- 14 students watch only Vampire Diaries and Gossip Girl
- 31 students watch only Pretty Little Liars and Gossip Girl
- 63 students watch Vampire Diaries
- 135 students do not watch Gossip Girl

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