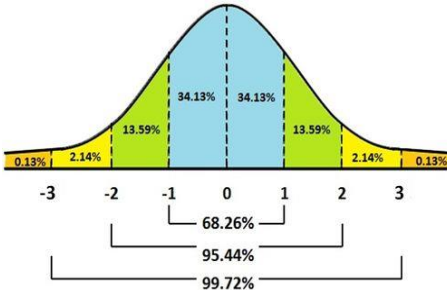


Goals

This week we have our in-class task and completing any unsubmitted classwork.



Theoretical Components

Study and revise for your in-class on Wednesday.

In **Week 13**, you are to sit an **In-Class Task** worth 20% during your Wednesday lesson. It is an “**open book**” task given under test conditions. You will be allowed to bring in your notes and worked exercises since Week 9 and, of course, your CAS calculator. Make sure you come to class EARLY.

Line 6 – You will need to meet in our classroom at 1:20 pm.

Practical Components

Any classwork you need to catch up on.

Investigation

In-Class is during your Wednesday lesson.

Other

Random fun fact: A twin prime is a prime number that is either two more or two less than another prime number - for example, 17 and 19. A famous result of Viggo Brun in 1915 is that the sum of the reciprocals of the twin primes is convergent, but one of the great open questions in all of mathematics is whether there are infinitely many twin primes. Brun's result shows that if there are infinitely many such primes, then they must be exceedingly rare. Breakthrough work by Yitang Zhang in 2013 demonstrated for the first time that there exists infinitely many pairs of primes that differ by a fixed finite number; in fact, Zhang gave an explicit value of 70 million for this difference. Subsequent work by an international group of mathematicians subsequently reduced this bound to 256 - much smaller than Zhang's original value, but still far off from the value of two required by the twin prime conjecture. For his pioneering work in this field, the British mathematician James Maynard was awarded the Fields Medal in 2022, regarded as the highest honour a mathematician can receive.