Year 11 M3:Higher Tier

Number and Algebra Overview

Learning Outcomes

You should be able to:

- find the LCM and HCF of numbers written as the product of their prime factors;
- find the original quantity, given the result of a proportional change;
- calculate the upper and lower bounds in calculations involving addition and multiplication of numbers expressed to a given degree of accuracy;
- know the difference between an equation and an identity;
- multiply two linear expressions;
- factorise quadratic expressions of the form $x^2 + bx + c$;
- factorise using the difference of two squares;
- add or subtract algebraic fractions, for example simplify

$$\frac{4x+3}{10} + \frac{6x-5}{5}$$

- simplify, multiply and divide algebraic fractions with linear or quadratic numerators and denominators;
- set up and solve linear equations of the form:

$$\frac{4x+3}{10} + \frac{6x-5}{5} = \frac{13}{2}$$

- set up and solve quadratic equations using factors.
- understand that the form $y=mx+c$ represents a straight line and that m is the gradient of the line and c is the value of the y – intercept;
- find the equation of a line through two given points or through one point with a given gradient;
- understand and use the gradients of parallel lines;