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| **H Unit 17:**  **Advanced Algebra** | **Road Map** |
| In this unit you will learn about algebra. The aims are as follows:**LG1**: Knowledge**LG2**: Application**LG3**: Skills | Assessment Grades |  |  |
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| **Themes** | **Learning Goals/Outcomes/Content** |  |  |  |
| 17  Changing the subject of formulae (more complex), algebraic fractions, solving equations arising from algebraic fractions, rationalising surds, proof | Rationalise the denominator involving surds;  |  |  |  |
| Simplify algebraic fractions;  |  |  |  |
| Multiply and divide algebraic fractions; |  |  |  |
| Solve quadratic equations arising from algebraic fraction equations;  |  |  |  |
| Change the subject of a formula, including cases where the subject occurs on both sides of the formula, or where a power of the subject appears; |  |  |  |
| Change the subject of a formula such as , where all variables are in the denominators; |  |  |  |
| Solve ‘Show that’ and proof questions using consecutive integers (*n*, *n* + 1), squares *a*2, *b*2, even numbers 2*n*, odd numbers 2*n* +1;  |  |  |  |
| Use function notation; |  |  |  |
| Find f(*x*) + g(*x*) and f(*x*) – g(*x*), 2f(*x*), f(3*x*) etc algebraically;  |  |  |  |
| Find the inverse of a linear function; |  |  |  |
| Know that f –1(*x*) refers to the inverse function; |  |  |  |
| For two functions f(*x*) and g(*x*), find gf(*x*). |  |  |  |

**Links:**

LG1: You will rationalise denominators, rearrange complex formulae, manipulate algebraic fractions and find inverse and compound functions.

LG2: You will apply algebraic processes to construct algebraic proofs and solve equations with algebraic fractions.

LG3: You will use your problem solving skills and mastery of algebra to form and solve equations expressed using function notation.