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| **F Unit 16:** **Algebra: Quadratic equations and graphs** | **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** |  |  |  |
| 16a Quadratic equations: Expanding and factorising | Define a ‘quadratic’ expression;  |  |  |  |
| Multiply together two algebraic expressions with brackets;  |  |  |  |
| Square a linear expression, e.g. (*x* + 1)2; |  |  |  |
| Factorise quadratic expressions of the form *x*2 + *bx* + *c*; |  |  |  |
| Factorise a quadratic expression *x*2 – *a*2 using the difference of two squares;  |  |  |  |
| Solve quadratic equations by factorising;  |  |  |  |
| Find the roots of a quadratic function algebraically.  |  |  |  |
| 16b Quadratic equations: Graphs | Generate points and plot graphs of simple quadratic functions, then more general quadratic functions;  |  |  |  |
| Identify the line of symmetry of a quadratic graph;  |  |  |  |
| Find approximate solutions to quadratic equations using a graph;  |  |  |  |
| Interpret graphs of quadratic functions from real-life problems;  |  |  |  |
| Identify and interpret roots, intercepts and turning points of quadratic graphs.  |  |  |  |

**Links:**

LG1: You will expand brackets, factorise expressions, solve quadratic equations and draw quadratic graphs.

LG2: You will apply your knowledge of quadratic graphs to find roots, turning points and lines of symmetry.

LG3: You will solve complex problems by forming and solving quadratic equations from geometric or word problems.