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| **H Unit 9: Solving quadratic and simultaneous equations, inequalities** | **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** | | |  |  |  |
| 9a Solving quadratics and simultaneous equations | Factorise quadratic expressions in the form *ax*2 + *bx* + *c*; | | |  |  |  |
| Solve quadratic equations by factorisation and completing the square; | | |  |  |  |
| Solve quadratic equations that need rearranging; | | |  |  |  |
| Set up and solve quadratic equations; | | |  |  |  |
| Solve quadratic equations by using the quadratic formula; | | |  |  |  |
| Find the exact solutions of two simultaneous equations in two unknowns; | | |  |  |  |
| Use elimination or substitution to solve simultaneous equations; | | |  |  |  |
| Solve exactly, by elimination of an unknown, two simultaneous equations in two unknowns: | | |  |  |  |
| linear / linear, including where both need multiplying; | | |  |  |  |
| linear / quadratic; | | |  |  |  |
| linear / *x*2 + *y*2 = *r*2; | | |  |  |  |
| Set up and solve a pair of simultaneous equations in two variables for each of the above scenarios, including to represent a situation; | | |  |  |  |
| Interpret the solution in the context of the problem; | | |  |  |  |
| 9b Inequalities | Show inequalities on number lines; | | |  |  |  |
| Write down whole number values that satisfy an inequality; | | |  |  |  |
| Solve simple linear inequalities in one variable, and represent the solution set on a number line; | | |  |  |  |
| Solve two linear inequalities in *x*, find the solution sets and compare them to see which value of *x* satisfies both solve linear inequalities in two variables algebraically; | | |  |  |  |
| Use the correct notation to show inclusive and exclusive inequalities. | | |  |  |  |

**Links:**

LG1: You will solve quadratic equations, simultaneous equations and inequalities using a variety of methods.

LG2: You will apply your knowledge of quadratic and simultaneous equations to solve word and geometric problems.

LG3: You will solve problems that combine knowledge and skills from this topic with other topics, such as tree diagram probability problems that result in a quadratic equation.