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| **F Unit 20: Rearranging equations, graphs of cubic and reciprocal functions and simultaneous equations** | **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** |  |  |  |
| 20 Rearranging equations, graphs of cubic and reciprocal functions and simultaneous equations  | Know the difference between an equation and an identity and use and understand the ≠ symbol;  |  |  |  |
| Change the subject of a formula involving the use of square roots and squares;  |  |  |  |
| Answer ‘show that’ questions using consecutive integers (*n*, *n* + 1), squares *a*2, *b*2, even numbers 2*n*, and odd numbers 2*n* +1;  |  |  |  |
| Solve problems involving inverse proportion using graphs, and read values from graphs; |  |  |  |
| Find the equation of the line through two given points; |  |  |  |
| Recognise, sketch and interpret graphs of simple cubic functions; |  |  |  |
| Recognise, sketch and interpret graphs of the reciprocal function  with *x* ≠ 0; |  |  |  |
| Use graphical representations of indirect proportion to solve problems in context;  |  |  |  |
| identify and interpret the gradient from an equation *ax* + *by* = *c*;  |  |  |  |
| Write simultaneous equations to represent a situation;  |  |  |  |
| Solve simultaneous equations (linear/linear) algebraically and graphically; |  |  |  |
| Solve simultaneous equations representing a real-life situation, graphically and algebraically, and interpret the solution in the context of the problem; |  |  |  |

**Links:**

LG1: You will rearrange formulae, sketch and recognise more complex graphs, and solve simultaneous equations.

LG2: You will apply your knowledge of algebraic conventions to construct a “show that” style proof.

LG3: You will use your problem solving skills and mastery of this topic to solve complex problems using algebra; for example, formulating simultaneous equations from a word problem, solving those equations and then drawing conclusions in the context of the original problem.