|  |  |
| --- | --- |
| **Unit 5: Further equations and inequalities** | **Year 9 Road Map** |
| In this unit you will learn about number. The aims are as follows:**LG1**: Knowledge **LG2**: Application **LG3**: Skills |
| **S/N** | **Level** | Learning Goals/Outcomes/Content | Video clipsR A G |  |  |  |
| **5a) Further Equations** |
| 1 | S | Select an expression/equation/formula/identity from a list;  | A3 |  |  |  |
| 2 | S | Write expressions and set up simple equations;  | A17 |  |  |  |
| 3 | S | Use function machines; | N26 |  |  |  |
| 4 | S | Solve simple equations; | A12 |  |  |  |
| 5 | SC | Solve linear equations, with integer coefficients, in which the unknown appears on either side or on both sides of the equation;  | A12 |  |  |  |
| 6 | SC | Solve linear equations which contain brackets, including those that have negative signs occurring anywhere in the equation, and those with a negative solution;  | 135 |  |  |  |
| 7 | SC | Solve linear equations in one unknown, with integer or fractional coefficients;  |  |  |  |  |
| 8 | SC | Substitute into a formula, and solve the resulting equation; | 95 |  |  |  |
| 9 | SC | Find an approximate solution to a linear equation using a graph;  |  |  |  |  |
| 10 | SCE | Solve angle or perimeter problems using algebra.  |  |  |  |  |
| 11 | SCE | Write an equation to solve a word problem. | 137 |  |  |  |
| 12 | E | Factorise quadratic expressions in the form *ax*2 + *bx* + *c*;  | 192 |  |  |  |
| 13 | CE | Solve quadratic equations by factorisation and completing the square; | 209b |  |  |  |
| 14 | E | Solve quadratic equations that need rearranging; | 190 |  |  |  |
| 15 | E | Set up and solve quadratic equations;  | 157 |  |  |  |
| 16 | CE | Solve quadratic equations by using the quadratic formula;  | 191 |  |  |  |
| 17 | CE | Find the exact solutions of two simultaneous equations in two unknowns;  | 162 |  |  |  |
| 18 | CE | Use elimination or substitution to solve simultaneous equations;  | A26a |  |  |  |
| 19 | CE | Solve exactly, by elimination of an unknown, two simultaneous equations in two unknowns: | A26b |  |  |  |
| 20 | E | linear / linear, including where both need multiplying; linear / quadratic; linear / *x*2 + *y*2 = *r*2; |  |  |  |  |
| 21 | E | Set up and solve a pair of simultaneous equations in two variables for each of the above scenarios, including to represent a situation;  | 211 |  |  |  |
| 22 | CE | Interpret the solution in the context of the problem; | 140 |  |  |  |
| **5b) Inequalities** |
| 23 | SC | Use the correct notation to show inclusive and exclusive inequalities;  |  |  |  |  |
| 24 | SC | Show inequalities on number lines;  | 138 |  |  |  |
| 25 | SC | Construct inequalities to represent a set shown on a number line;  | A20a |  |  |  |
| 26 | SCE | Write down whole number values that satisfy an inequality;  |  |  |  |  |
| 27 | CE | Solve simple linear inequalities in one variable, and represent the solution set on a number line; |  |  |  |  |
| 28 | CE | Solve an inequality such as –3 < 2*x* + 1 <7 and show the solution set on a number line;  | 139 |  |  |  |
| 29 | CE | Solve two inequalities in *x*, find the solution sets and compare them to see which value of *x* satisfies both;  |  |  |  |  |
| 30 | E | 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;  | 212 |  |  |  |
| Student’s comments and questions |