## Higher paper 1

| Number (*see Ratio – some ove | Number (*see Ratio – some overlap of topic areas) |  |
|-------------------------------|---|--|
| Fractions                     | Fraction of an amount                             |  |
|                               | Fraction arithmetic                               |  |
|                               | Recurring decimal to fraction                     |  |
| Properties                    | Product of prime factors                          |  |
|                               | Negative and fractional indices                   |  |
| Powers and roots              | Simplification of surds                           |  |
| Standard Form                 | Conversion  |  |
|                               | Calculation                                       |  |
| Algebra                       |   |  |
| Manipulation                  | Simplification                                    |  |
|                               | Expansion of brackets                             |  |
|                               | Algebraic fractions                               |  |
| Equations and inequalities    | Linear inequality                                 |  |
|                               | Form an equation                                  |  |
|                               | Quadratic equation                                |  |
|                               | Equation of a tangent to a circle                 |  |
| Graphs                        | Quadratic graph                                   |  |
|                               | Speed-time graph                                  |  |
|                               | Gradients of parallel and perpendicular lines     |  |
|                               | Gradient of a curve                               |  |

| Percentages                          | Percentage of an amount     |
|--------------------------------------|-----------------------------|
| Ratio                                | Write as a ratio            |
|                                      | Use of ratio                |
|                                      | Share in a ratio            |
|                                      | Ratio to fraction           |
| Proportion                           | Equations of proportion     |
| Compound Measures                    | Density                     |
| Geometry and measures                |                             |
| Angles                               | Angles in a polygon         |
| ength, area and volume               | Area of a triangle          |
|                                      | Volume of a cube            |
|                                      | Surface area of a cuboid    |
|                                      | Area of a sector            |
| ythagoras's Theorem and Trigonometry | Pythagoras's Theorem        |
|                                      | Exact trigonometric values  |
| /ectors                              | Vector geometry             |
| Probability                          |                             |
| Probability                          | Probability                 |
|                                      | Independent combined events |
| Statistics                           |                             |
| Diagrams                             | Cumulative frequency graph  |
| Measures                             | Mean                        |
|                                      | Inter-quartile range        |

## Higher paper 2

| Number (*see Ratio – some overlap of topic areas) |  |  |
|---|--|--|
| Approximation and estimation                      | Error interval                                   |  |
| Other   | Use of a calculator                              |  |
| Algebra   |  |  |
| Manipulation                                      | Simplification                                   |  |
|   | Expansion of bracket                             |  |
|   | Factorisation                                    |  |
|   | Laws of indices                                  |  |
| Equations and inequalities                        | Linear equation                                  |  |
|   | Equations of parallel lines                      |  |
|   | Form an equation                                 |  |
|   | Quadratic inequality                             |  |
| Graphs  | Coordinates                                      |  |
|   | Transformations of functions                     |  |
|   | Graphs of trigonometric functions                |  |
| Functions   | Inverse and composite functions                  |  |
| Ratio, proportion and rates of cha                | ange (*see Number – some overlap of topic areas) |  |
| Conversions                                       | Area   |  |
| Percentages                                       | Depreciation                                     |  |
| Ratio   | Use of ratio                                     |  |
| Proportion  | Direct proportion                                |  |
|   | Currency conversion                              |  |
|   | Inverse proportion                               |  |
| Compound measures                                 | Pressure   |  |

| Geometry and measures                 |                                 |  |
|---------------------------------------|---------------------------------|--|
| Shape                                 | Transformations                 |  |
| Angles                                | Circle theorems                 |  |
| Length, area and volume               | Area of a rectangle             |  |
|                                       | Volume of composite solid       |  |
| Pythagoras's Theorem and Trigonometry | Sine and Cosine Rules           |  |
| Probability                           |                                 |  |
| Probability                           | Venn diagram                    |  |
|                                       | Probability from a Venn diagram |  |
| Statistics                            |                                 |  |
| Diagrams                              | Box plot                        |  |
| Measures                              | Lower and upper quartiles       |  |
| Depulations                           | Compare distributions           |  |
| Populations                           | Capture-recapture method        |  |

## Higher paper 3

| Number (*see Ratio – some overlap of topic areas) |   |  |
|---|---|--|
| Arithmetic  | Negative number                                 |  |
| Properties  | Laws of indices                                 |  |
| Approximation and estimation                      | Bounds  |  |
| Other   | Product rule for counting                       |  |
| Algebra   | ·   |  |
| Manipulation                                      | Simplification                                  |  |
|   | Expansion of bracket                            |  |
|   | Substitute values                               |  |
|   | Difference of two squares                       |  |
|   | Expansion of brackets                           |  |
|   | Change subject of a formula                     |  |
|   | Forming an expression                           |  |
|   | Algebraic fractions                             |  |
| Equations and inequalities                        | Set up and solve equation                       |  |
|   | Simultaneous equations linear/quadratic         |  |
| Graphs  | Gradient of a straight line graph               |  |
| Ratio, proportion and rates of cha                | nge (*see Number – some overlap of topic areas) |  |
| Conversions                                       | Time  |  |
| Percentages                                       | Percentage decrease                             |  |
|   | Depreciation                                    |  |
|   | Reverse percentage                              |  |

| Ratio                                 | Write as a ratio            |
|---------------------------------------|-----------------------------|
|                                       | 1 : n form                  |
|                                       | Share in a ratio            |
| Proportion                            | Direct proportion           |
| Compound Measures                     | Average speed               |
| Growth and decay                      | General iterative processes |
| Geometry and measures                 |                             |
| Angles                                | Circle theorems             |
| Length, area and volume               | Area of a trapezium         |
|                                       | Similar triangles           |
| Pythagoras's Theorem and Trigonometry | Pythagoras's Theorem        |
|                                       | Trigonometry                |
|                                       | Trigonometry in 3-D         |
| /ectors                               | Column vectors              |
| Probability                           |                             |
| Probability                           | Dependent combined events   |
| Statistics                            |                             |
| Diagrams                              | Frequency polygon           |
|                                       | Histogram                   |