Gordon's School Mathematics Department

A-Level Further- Curriculum Map

Year 13

Further Mechanics

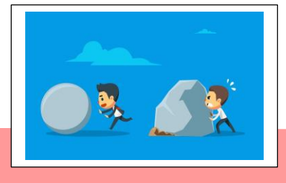
- Momentum as a vector
- Elastic strings and springs
- Elastic collisions in two dimensions

Core Pure Maths

- Complex numbers
- Series
- Methods in calculus
- Volumes of revolution
- Polar coordinates
- Hyperbolic functions
- Differential equations

Decision Maths

- Planarity algorithm
- Floyd's algorithm
- Route inspection
- The travelling salesman problem
- The simplex algorithm
- Critical path analysis



Year 12

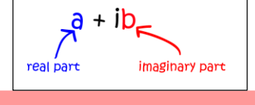
Further Mechanics

- Momentum and impulse
- Work, energy and power
- Elastic collisions in one dimension

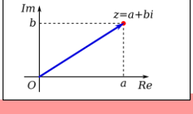
Core Pure Maths

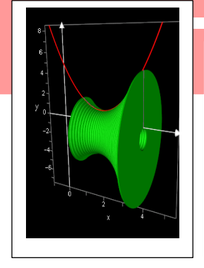
- Complex numbers
- Argand diagrams
- Series
- Roots of polynomials
- Volumes of revolution
- Matrices
- Linear transformations
- Proof by induction
- Vectors

Complex numbers:

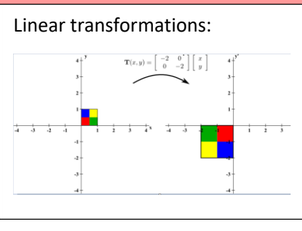


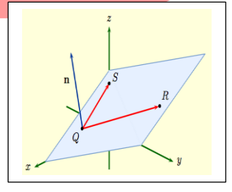
Argand diagrams:





Linear transformations:

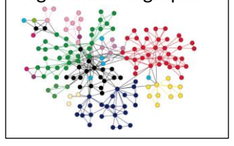




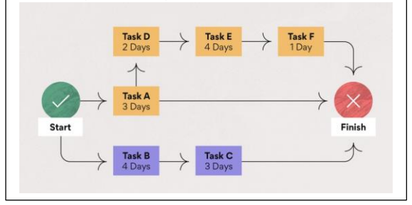
Decision Maths

- Algorithms
- Graphs and networks
- Algorithms on graphs
- Route inspection
- Linear programming
- Critical path analysis

Algorithms on graphs:



Critical path analysis:



Exam Specification:

Should this QR code not work, please click here to view the relevant specification.

Key Words / Skills:

Command words

Show that - Show a result is true. Because you are given the result, your explanation has to be sufficiently detailed to cover every step of your working.

Hence - An indication that the next step should be based on what has gone before.

Prove - Provide a formal mathematical argument to demonstrate validity.

Exact - An exact answer is one where numbers are not given in rounded form.

Verify - Substitute given values to demonstrate the truth of a statement.

Sketch - Draw a diagram, not necessarily to scale, showing the main features of a curve.

Determine - Justification should be given for any results found, including working where appropriate.

Find, Solve, Calculate - While working may be necessary to answer the question, no justification needs to be given for any results found.