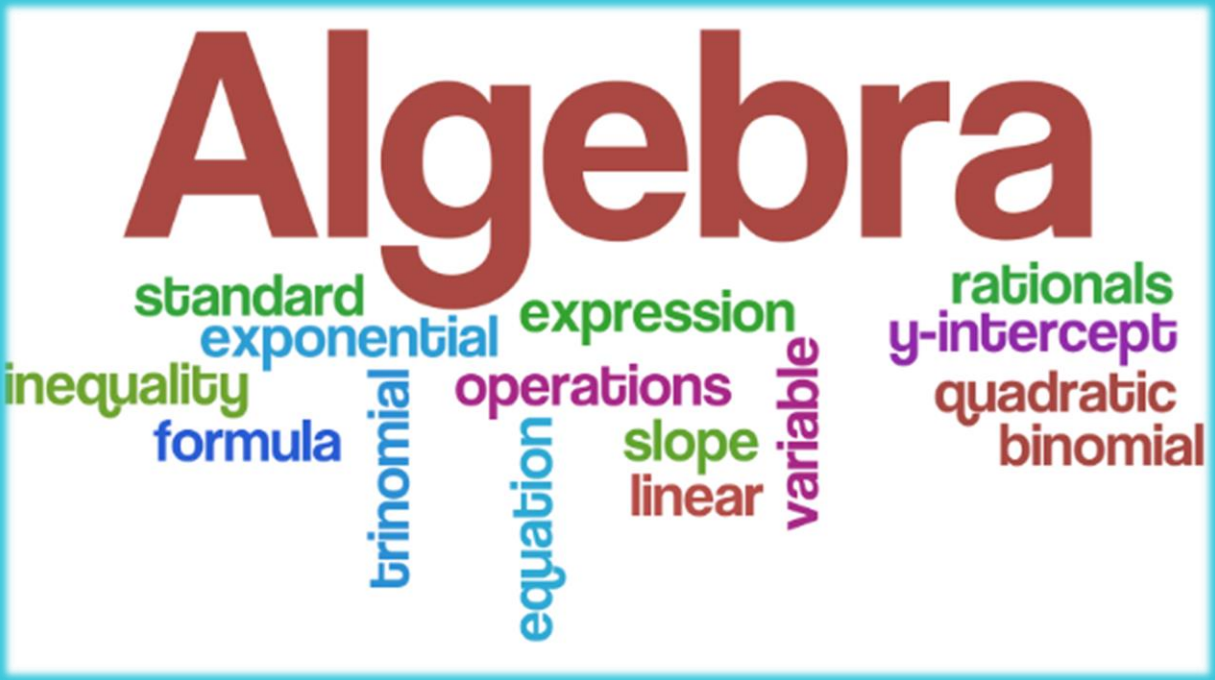


Always Algebra

Key Stage 4 Revision Programme

Pupil Name

Handbook Designed by Dr. Gary Poole

Timetable and Assessment Dates

Timetable – Tutorials

Tutorial	Date	Time	Location
0 (Baseline)	w/c 21st January		
1	w/c 28th January		
2	w/c 4th February		
3	w/c 18th February		
4	w/c 25th February		
5/6 (Final Assignment)	w/c 4th March		
7 (Feedback)	w/c 11th March		

Uni Pathways – Pupil Feedback Report

Name of PhD Tutor	Dr. Gary Poole		
Title of Assessment	Always Algebra		
Name of Pupil			
Name of School	Reach Academy Feltham		
ORIGINAL MARK / 100		FINAL MARK / 100	

Learning Feedback Comment 1	
	How you could improve in the future:

Learning Feedback Comment 2	
	How you could improve in the future:

Learning Feedback Comment 3	
	How you could improve in the future:

Resilience Comment	
How you showed learning resilience during the course	How you could build learning resilience in the future

Course Rationale

This course is designed for pupils that are aiming to achieve a grade 8 and above in their GCSE Mathematics.

In this course we will focus our attention on Algebra topics that are generally quite challenging to most students. We will look to master the material by practicing the various skills and applications that are needed for GCSE Higher success.

As part of this course we will develop our deeper understanding by working with material and questions right on the boundary of the GCSE specification, even touching on some introductory GCE (AS level) material that will help us to fully consolidate and strengthen our abilities.

The overall aim is to respond to the examiner's feedback from previous GCSE cohorts about the general areas of development in Algebra. By focusing our practice on those areas that are generally weaknesses for most of the population, we give ourselves the best chance of obtaining marks that many other pupils will not get.

Topic Key Vocabulary

Word/Notation	Definition	Example	Non-Example
Term			
Expression			
Equation			
Formula			
Graph			
Solution/Root			
Subject			
Index/Indices			
Quadratic			
Simultaneous			
Inequality			
Discriminant			

Tutorial 1 – Factorising Trinomials/Quadratics

What is the Purpose of Tutorial 1?

A) To factorise into single brackets fully.
B) To factorise quadratic expressions, including those with two variables.
C) To factorise quadratic expressions with a>1.

Notes

Tutorial 2 – Forming and Solving Simultaneous Equations

$$4x + 2y = 20$$
$$7x - 3y = 9$$

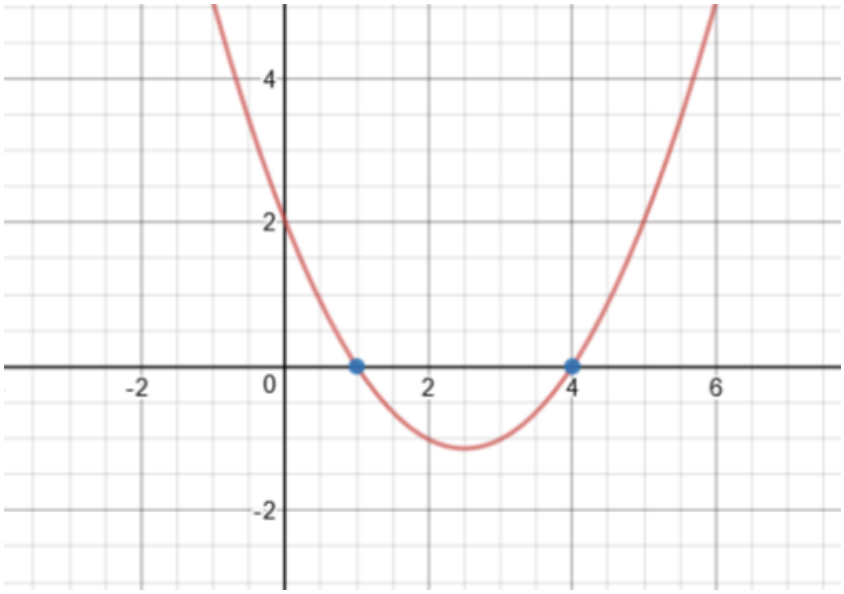
$$x = 3$$
$$y = 4$$

What is the Purpose of Tutorial 2?

A) To solve simultaneous equations.
B) To solve quadratic simultaneous equations.
C) To form simultaneous equations from context.

Notes

Tutorial 3 – Transformations of Functions

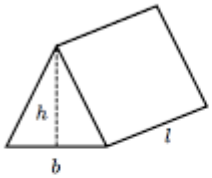


What is the Purpose of Tutorial 3?

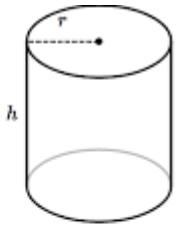
A) To sketch transformations of given functions and their graphs.
B) To find the coordinates of key points of transformed functions.

Notes

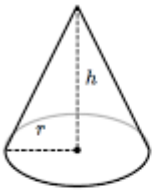
Tutorial 4 – Forming Equations in Geometric Contexts



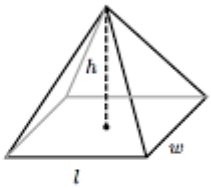
$$V = \frac{b \cdot h \cdot l}{2}$$



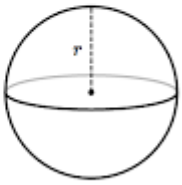
$$V = \pi r^2 h$$



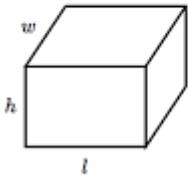
$$V = \frac{\pi r^2 h}{3}$$



$$V = \frac{l \cdot w \cdot h}{3}$$



$$V = \frac{4}{3}\pi r^3$$



$$V = l \cdot w \cdot h$$

What is the Purpose of Tutorial 4?

A) Write down formulae for unusual compound shapes and solids.
B) Form and solve equations to find lengths, areas or volumes.
C) Form and solve equations that compare two shapes or solids.

Notes

Tutorial 5 – Mixed Forming and Solving In Context

What is the Purpose of Tutorial 5?

A) To form and solve equations in various contexts.
B) To prepare for the final assessment.

Notes

Tutorial 6 – Final Assessment

In this session you will sit a final assessment similar to the baseline you completed at the start.

The content of the Uni Pathways course will have supported you to achieve your best in this assessment.

Once this assessment is marked you will be given feedback to help you direct your revision for your GCSE.

Try your best, and good luck!

Tutorial 7 – Feedback Session

What is the Purpose of Tutorial 6?

D) To receive feedback on final assessments.
E) To share examples of best practice with the other pupils in your group.
F) To write targets for improvement towards GCSEs.
G) To reflect on the programme including what was enjoyed and what was challenging.

Final assignment feedback

What I did well…	What I could have improved on…

My target for future work is…

Reflecting on Uni Pathways

What did you most enjoy about Uni Pathways?

What did you find challenging about the programme?	How did you overcome these challenges?

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Key Stage 4 Programme

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