

Pre A-level mathematics work

This work is designed for those students wishing to do A-level mathematics at Wood Green school starting September 2020. This content has been selected to support your understanding of key GCSE topics so that you can start the A-level mathematics course in the best possible position. The topics covered are;

- Surds and indices
- Algebraic manipulation
- Quadratics
- Trigonometry
- Functions
- Transformations of graphs
- Vectors

The work is in three sections (the first two are included in this document and the third online). The first section is the videos in under each topic, these should be used to support your understanding of the topics and for making notes. The second part is the exam style questions in each topic, solutions to these are also included, these should be used to assess your own revision of the topics. You may need to go back to the videos and get further help to ensure you can answer these, use the solutions to support you and check you are doing this correctly. For the final section you will need to sign up using this link -

<http://www.drfrostmaths.com/register.php?cid=47313&passcode=69338>

You will need to sign up before Friday 15th May, so that work can be allocated to you.

You will then be assigned problems to answer online. Be aware that you do not need to submit your work from the first two sections, only the online work will be submitted. So, ensure you are confident with the topics before you attempt the online work.

This needs to be completed by **Tuesday 30th June 2020**.

Any questions, please do not hesitate to contact me by email.

Kind regards,

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Surds and indices

Task 1

Watch these video and make notes;

1. [Index notation 1](#)
2. [Index notation 2](#)
3. [Index notation 3](#)
4. [Index notation 4](#)
5. [Index notation 5](#)
6. [Index notation 6](#)
7. [Index notation 7](#)

Task 2

Complete all questions on [indices](#) and use [solutions](#) to check.

Task 3

Watch these video and make notes;

1. [Simplifying surds](#)
2. [Multiplying surds](#)
3. [Rationalising surds 1](#)
4. [Rationalising surds 2](#)

Task 4

Complete all questions on [surds](#) and use [solutions](#) to check.

Algebraic manipulation

Task 1

Watch these video and make notes;

8. [Adding algebraic fractions](#)
9. [Multiplying algebraic fractions](#)
10. [Dividing algebraic fractions](#)
11. [Simplifying algebraic fractions](#)

Task 2

Complete all questions on [Algebraic fractions](#) and use [solutions](#) to check.

Task 3

Watch this video and make notes;

1. [Rearranging formulas 1](#)
2. [Rearranging formulas 2](#)
3. [Rearranging formulas 3](#)

Task 4

Complete all questions on [Rearranging formulas](#) and use [solutions](#) to check.

Quadratics

Task 1

Watch these video and make notes;

12. [Factorising 1](#)
13. [Factorising 2](#)

Task 2

Complete all questions on [solving quadratics](#) and use [solutions](#) to check,

Task 3

Watch this video [Quadratic equation](#).

Task 4

Complete all questions on [Quadratic formula](#) and use [solutions](#) to check.

Task 5

Watch these video and make notes;

1. [Completing the square 1](#)
2. [Completing the square 2](#)

Task 6

Complete all questions on [Completing the square](#) and use [solutions](#) to check.

Task 7

Watch this video on [Quadratic simultaneous equations](#).

Task 8

Complete all questions on [Quadratic simultaneous equations](#) and use [solutions](#) to check.

Trigonometry

Task 1

Watch these video and make notes;

14. [Sine rule – missing sides](#)
15. [Sine rule – missing angles](#)

Task 2

Complete all questions on [Sine rule](#) and use [solutions](#) to check.

Task 3

Watch these video and make notes;

1. [Cosine rule](#)
2. [Cosine rule – missing angles](#)

Task 4

Complete all questions on [Cosine rule](#) and use [solutions](#) to check.

Functions

Task 1

Watch this [video](#) on inverse functions and make notes.

Task 2

Watch this [video](#) on composite functions and make notes.

Task 3

Complete all questions on [Inverse and composite functions](#) and use [solutions](#) to check.

Transformations of graphs

Task 1

Watch this [video](#) on exponential graphs and make notes.

Task 2

Watch this [video](#) on transforming graphs and make notes.

Task 3

Complete all questions on [Trig and exponential graphs](#) and use [solutions](#) to check

Complete all questions on [Transforming graphs](#) and use [solutions](#) to check.

Vectors

Task 1

Watch this [video](#) and make notes. You can ignore the specification as this is different to yours and any references to textbooks.

Task 2

Complete all questions on vectors [worksheet A](#). Check your [answers](#) as you go.

Task 3

Watch this [video](#) and make notes. You can ignore the specification as this is different to yours and any references to textbooks.

Task 4

Complete all questions on [vectors](#) and use [solutions](#) to check.