Introduction to A-Level Mathematics

'A'-Level Mathematics

A Level

3 x 2 hour papers

Exam 1 Pure Mathematics

Exam 2 Pure Maths and Mechanics

Exam 3 Pure Maths and Statistics

PRE-REQUISITE KNOWLEDGE

- Solve linear equations
- Solve simultaneous equations
- Rearrange a formula
- Calculate gradient of a straight line
- Solve linear inequalities
- Manipulate fractions
- Factorise & expand quadratics
- Problem Solving using Algebraic Methods

PRE-REQUISITE KNOWLEDGE

o Solve linear equations
o Solve simultaneous equations
o Rearrange a formula
o Calculate gradient of a straight line
o Solve linear inequalities
o Manipulate fractions
o Factorise & expand quadratics

Solve the equation $8w - 5 = 3w + 1$

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....

Answer $w =$ ....

Solve the equation $\dfrac{x+1}{2-3x} = 3$

....

....

Answer $x =$ ....

PRE-REQUISITE KNOWLEDGE

o Solve linear equations
o **Solve simultaneous equations**
o Rearrange a formula
o Calculate gradient of a straight line
o Solve linear inequalities
o Manipulate fractions
o Factorise & expand quadratics

olve the simultaneous equations

$$2x + 5y = 16$$

$$4x + 3y = 11$$

You **must** show your working.

Do **not** use trial and improvement.

....

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PRE-REQUISITE KNOWLEDGE

o Solve linear equations

o Solve simultaneous equations

o **Rearrange a formula**

o Calculate gradient of a straight line

o Solve linear inequalities

o Manipulate fractions

o Factorise & expand quadratics

Make x the subject of the formula $\qquad y = \dfrac{2x+3}{x-4}$

PRE-REQUISITE KNOWLEDGE

o Solve linear equations
o Solve simultaneous equations
o Rearrange a formula
o Calculate gradient of a straight line
o Solve linear inequalities
o Manipulate fractions
o Factorise & expand quadratics

sketch of the line $2y - x = 4$ is shown.
The line crosses the axes at A and B.

Calculate the gradient of the line AB.

PRE-REQUISITE KNOWLEDGE

- Solve linear equations
- Solve simultaneous equations
- Rearrange a formula
- Calculate gradient of a straight line
- **Solve linear inequalities**
- Manipulate fractions
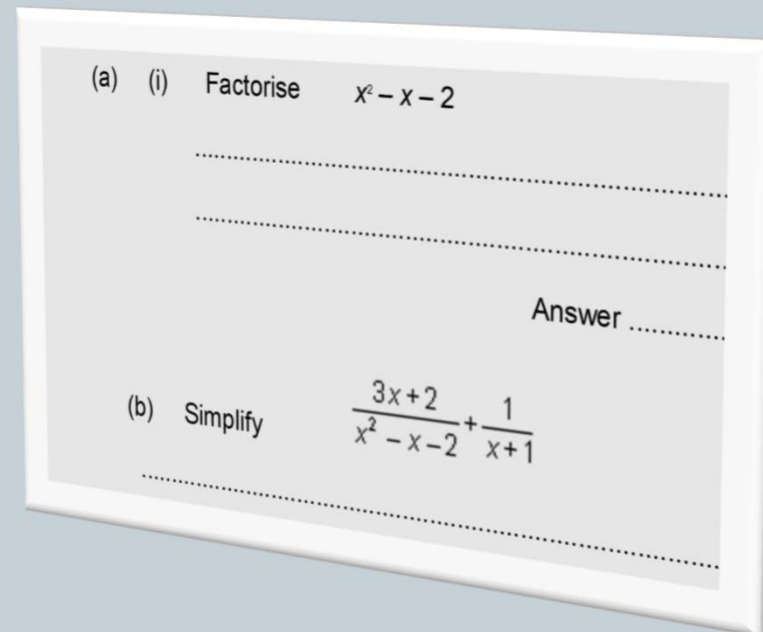- Factorise & expand quadratics

(a) Solve the inequality $3x + 7 > x + 8$

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PRE-REQUISITE KNOWLEDGE

- Solve linear equations
- Solve simultaneous equations
- Rearrange a formula
- Calculate gradient of a straight line
- Solve linear inequalities
- Manipulate fractions
- Factorise & expand quadratics

(a) (i) Factorise $x^2 - x - 2$

....

....

Answer ....

(b) Simplify $\dfrac{3x+2}{x^2-x-2} + \dfrac{1}{x+1}$

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PRE-REQUISITE KNOWLEDGE

You will be tested in your first lesson!

<u>Please</u> make sure you are prepared for this.

'A'-Level Mathematics
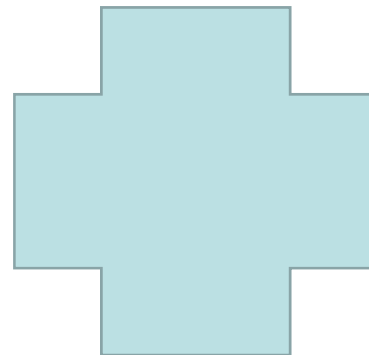
A Level Summer Transition Task

To get you A Level Maths ready!

Make sure you complete the

Basic Skills Check and Problem Solving section from the booklet!

The Problem!

You have a 18cm square of cardboard. You cut a 1cm square from each corner and fold it to make an open box. What is the boxes volume?

What is the maximum volume that could be made?

18cm

Length of side of square cut out	Working	Volume
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		

Length of side of square cut out	Working	Volume
0	0 x 18 x 18	0
1	1 x 16 x 16	256
2		
3		
4		
5		
6		
7		
8		
9		
x		

Length of side of square cut out	Working	Volume
0	0 x 18 x 18	0
1	1 x 16 x 16	256
2	2 x 14 x 14	392
3	3 x 12 x 12	432
4	4 x 10 x 10	400
5	5 x 8 x 8	320
6	6 x 6 x 6	216
7	7 x 4 x 4	112
8	8 x 2 x 2	32
9	9 x 0 x 0	0
x	$X(18 - 2x)(18 - 2x)$	$4x^3 - 72x^2 + 324x$