



# Introduction Day

# A Level MATHS



# A Level Maths

## *Course Structure*

Edexcel - 2 Year Course

Three Exams at end of 2 years

# A Level Maths

Three 2 hour Exams

- 1) Pure Maths 1 ( 100 marks)
- 2) Pure Maths 2 (100 marks)
- 3) Statistics and Mechanics (100 marks) –  
Section A- Statistics (50 marks) , Section B –  
Mechanics (50 marks)

# A Level Maths

Two-year course but there will be regular assessments throughout the course :

- Progress Test at end of every half-term ( you will be required to reach a specified level otherwise tests will be repeated)
- Mock Exam – used to determine who will be eligible to move on into the 2<sup>nd</sup> year. ( A repeat exam will be allowed prior to the end of year for those failing to achieve the required level)

# AS Maths

You will also be entered in the AS maths exam at the end of May.

This will give you experience of sitting an external exam and will give some indication of how you are getting on with the course.

# Main Topics – First Year

## Pure

Algebra  
Functions  
Differentiation  
Integration  
Vectors  
Co-ordinate Geometry  
Trigonometry  
Exponentials and logarithms  
Algebraic and Partial Fractions  
Proofs  
Series and Sequences  
Binomial Theorem  
Parametric Equations  
Numerical Methods

## Statistics

Data presentation and  
Interpretation  
Statistical Distributions  
Probability  
Statistical Sampling  
Statistical Hypothesis Testing  
The Normal Distribution  
Regression and Correlation

## Mechanics

Quantities and Units in  
Mechanics  
Kinematics  
Forces and Newton's Law  
Moments

# Flying Start





# Flying Start

## Recap Higher GCSE Topics :

1. Rearranging formula
2. Expanding / Factorising
3. Solving Quadratics
4. Simultaneous Equations
5. Indices
6. Surds
7. Iteration methods
8. Cumulative Frequency Curves
9. Histograms
10. Conditional Probability
11. Trigonometry – right-angled and non-right-angled
12. Transformations of graphs
13. Vectors

# Flying Start

Organised:

Set up a study time-table as soon as possible

When will you complete your weekly Maths homework ?

Anytime you can attend additional catch-up sessions if required ?

**YOU WILL NOT OBTAIN A GOOD GRADE IN A LEVEL MATHS IF YOU DON'T COMPLETE THE WEEKLY HOMEWORKS (its not GCSE !)**

# Any Questions ?

Email [maths@stvincent.ac.uk](mailto:maths@stvincent.ac.uk)



1.  $\frac{2^3 \times 2^4}{2^2} = \frac{2^{12}}{2^2} = 2^6 = 64$

2.  $4^{-3} = \frac{1}{4^3} = \frac{1}{64}$

3.  $6 \times 10^{-3} = 0.0006$

4.  $(3ab)^3 = 27a^3b^3$

5.  $\frac{ab^2c \times 2bc}{b} = 2ab^2c^2$

6.  $12ab + 6c + 3 = 21abc$

7.  $(ab)^2 = a^2 + 2ab + b^2$

8.  $\frac{4^r \times 2^s}{8^2} = 2^{2r+s-6}$

9.  $(a^3)(a^2) = a^6$

10.  $4^{-\frac{1}{2}} = \frac{1}{2}$

Which of the above are correct ? If incorrect work out the correct answer.

# Answers

1.  $2^7/2^2 = 2^5 = 32$

3. 0.006

6.  $12ab + 6c + 3$

7.  $a^2b^2$

9.  $a^5$

Others correct

Each term occurs in one of the sequences ( some in more than one) but they have been muddled up. Try and put them back correctly ?

Sequences	Terms
1000, 500, 250 ...	89
4, 15, 26 ...	70
500, 491, 482 ...	214
2, 6, 10 ...	3456
2, 6, 18 ...	311
4, -12, 36 ...	82
1, 4, 16 ...	162
-3, 4, 11 ...	125
14, 17, 20 ...	324
2, 24, 288 ...	1024

## Answers

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# Which is the odd one out in each row?

$\sqrt{72}$	$6\sqrt{2}$	$2\sqrt{6}$	$3\sqrt{8}$
$\sqrt{600}$	$2\sqrt{150}$	$5\sqrt{24}$	$6\sqrt{10}$
$\sqrt{108}$	$2\sqrt{27}$	$3\sqrt{6}$	$6\sqrt{3}$
$\sqrt{508}$	$14\sqrt{3}$	$7\sqrt{12}$	$2\sqrt{147}$



# Answers

$\sqrt{72}$	$6\sqrt{2}$		$3\sqrt{8}$
$\sqrt{600}$	$2\sqrt{150}$	$5\sqrt{24}$	
$\sqrt{108}$	$2\sqrt{27}$		$6\sqrt{3}$
	$14\sqrt{3}$	$7\sqrt{12}$	$2\sqrt{147}$