

Maths A Level

Year 2

Honest Self-assessment
followed by Remedial Action

September 3rd 2018 – May 17th 2019

85 Lessons

29 Weeks

17 New Topics

5 Tracking Tests

3 Mock Exams

1 Grade

We are aiming to finish the course on February 11th
which will give four months for revision

Starting the Second Year course

- Monday September 3rd: Mini lesson (today!)
- Friday September 7th : Mini lesson (in here)
 - Please bring in your “Continuing With Confidence” (CWC) booklet.
 - It doesn’t have to be completed by this lesson.
- Friday 14th September: First lesson
 - Implicit Differentiation
 - Please watch the video
 - Please bring in your completed CWC booklet
 - the lesson will be in **Hut 5**
- Monday 24th September: CWC Tracking Test

Assignments

- The first assignment will be made available within the next couple of days
- It is due in on **Wednesday 26th September**
- All assignments will be due in on a **Wednesday** this year
- Over the next couple of weeks, concentrate on the CWC booklet and use it to prepare for the CWC test
- “Backpack” the most difficult questions

Today

Make sure you use today's lesson to sort out any problems you may be having with the Continuing With Confidence booklet.

Discuss these problems with other students on your table.

“Backpack” any questions you have found challenging.

Is there a mistake in CWC 10B Qu. 1?

The mass isn't given. What should it be?

A particle is held at rest on a rough plane which is inclined to the horizontal at an angle α , where $\tan \alpha = 0.75$. The coefficient of friction between the particle and the plane is 0.5. The particle is released and slides down the plane. Find

- a** the acceleration of the particle,
- b** the distance it slides in the first 2 seconds.

Answer: a) 1.96 m/s^2 b) 3.9 m down plane

A question from this year's A level paper

- 1 (a) Find the binomial series expansion of

$$\sqrt{4-9x}, \quad |x| < \frac{4}{9}$$

in ascending powers of x , up to and including the term in x^2
Give each coefficient in its simplest form.

(5)

- (b) Use the expansion from part (a), with a suitable value of x , to find an approximate value for $\sqrt{310}$

Show all your working and give your answer to 3 decimal places.

(3)

(Total 8 marks)

$$a) 2 - \frac{9}{4}x - \frac{81}{64}x^2 \quad b) 17.623 \quad (\sqrt{310} = 10\sqrt{3.1} \text{ use } x = 3.1)$$

Another question from this year's A level paper

3 (i) Given that

$$\frac{13-4x}{(2x+1)^2(x+3)} \equiv \frac{A}{2x+1} + \frac{B}{(2x+1)^2} + \frac{C}{x+3}$$

(a) find the values of the constants A , B and C .

(4)

(b) Hence find

$$\int \frac{13-4x}{(2x+1)^2(x+3)} dx, \quad x > -\frac{1}{2}$$

(3)

(ii) Find

$$\int (e^x + 1)^3 dx$$

(3)

i) a) $A = -2, B=6, C = 1$ b) $-\ln|2x + 1| - \frac{3}{2x+1} + \ln|x + 3| + c$

ii) $\frac{1}{3}e^{3x} + \frac{3}{2}e^{2x} + 3e^x + x + c$