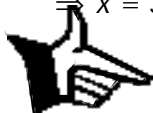


Presentation of your work - you can gain up to 6 marks for this!

As you answer the questions pay attention to the points below.

- make sure you use correct notation - eg powers e^{-kx} x^2 etc., trig functions \sin^2x , $\cos^{-1}x$ etc.
- make sure you use "=" signs correctly
eg if $(x - 1)(2x + 4) = 0$
then $x = 1$ or $x = -2$
(don't write $x = 1 = -2$)
- give the units of any answer if appropriate
- scale axes of graphs
- label axes of graphs
- make sure your answer is easy to follow (cross out any incorrect working)
- link mathematical arguments with words and/or mathematical notation
eg $\sin x^\circ = \frac{1}{2}$ for $0 < x < 720$
 $\Rightarrow x = 30, 150, 390, 510$.



You should leave some time at the end of the exam to check your answers and improve your presentation.



Remember: Never sit doing nothing!

Good luck!

Applying Mathematics

Tackling the Exam

Paper 1



Preparation



Make sure you get the comprehension article as soon as it's available!



Read the article through once - just to get a feel for what it's about.

Read it through again - this time very carefully.

Mark with different colour highlighters:

- algebra
- graphs
- data / values (some of these may be used in the algebra or graphs)
- assumptions that have been made in developing the algebra or drawing the graphs (eg initial values when $t = 0$)
- interpretation of graphs, algebra, solutions to problems

Now try to make sense of all this →



If you are unsure about anything ask your teacher.



Algebra - make sure you:

- understand how you get from each line of algebra to the next - write out any intermediate steps that help
- can substitute data / values into any equations / formulae
- understand any answers given in the text or that you get by substituting into algebra / formulae
- can solve equations (try putting formulae equal to a value from the text)

Graphs - Always use your graphic calculator to help you.

- Does the text contain any functions that can be graphed? If so make sure that you can draw sketches of these. Remember to show all the significant features such as where the graph cuts the axes.
- Make sure you can use any given graphs (both ways) to find one value given another.
- Make sure you know how any graphs of functions can be found using transformations of graphs of basic functions on which they are based.
- For graphs in the article write some sentences that describe the graph in terms of the situation.
For example: What does the graph tell you when $t = 0$?
When do maximum or minimum values occur? Why? Where is the steepest gradient? What is happening there? Why?
- Think about how the graph would change if initial (or other values) were different.

Data / values

- Make sure you know how these are related to the algebra and graphs.
- Consider how the algebra / graphs would be different if any of the data / values changed.

Assumptions / Interpretation

- Consider how any assumptions that have been made are related to the algebra and graphs and how these would change if the assumptions were different.
- Think about what any algebra, graphs or solutions mean about the situation being described.

The Exam**Timing**

You have 1 hour. There are 24 marks spread across the questions and you can gain up to 3 marks for good use of mathematical notation and up to another 3 marks for presentation of mathematical arguments / working. Allow about 2 minutes per mark - this should leave you about 10 minutes at the end to check your presentation.



You could go through the paper and write by each question how long you should allow to do it.

IMPORTANT

If a question is taking you a lot longer than the marks suggest it should - STOP. Go on to another question. You can come back to the question later - if you have time.

Answers

Always think if each numerical answer is reasonable.

**Graphs**

If you are asked to sketch a graph:

- use your graphic calculator to help you
- label the axes
- show clearly any significant features such as asymptotes and turning points.

