

QUESTION 3 ON Paper 2 of our "Mock" Practice Exam

[Maximum mark: 14]

Consider the function $f(x) = 0.3x^3 + \frac{10}{x} + 2^{-x}$.

- (a) Calculate $f(1)$. [2]
- (b) Sketch the graph of $y = f(x)$ for $-7 \leq x \leq 4$ and $-30 \leq y \leq 30$. [4]
- (c) Write down the equation of the vertical asymptote. [2]
- (d) Write down the coordinates of the x -intercept. [2]
- (e) Write down the possible values of x for which $x < 0$ and $f'(x) > 0$. [2]

Consider a second function, $g(x) = 2x - 3$.

- (f) Find the solution of $f(x) = g(x)$. [2]

Follow the instructions given to you 2 weeks ago on how to write a Paper 2 type answer. (including the separate paper part!) IN CASE YOU LOST THEM, there is another copy on the back side.

This is due no later than the start of class on Monday. Be sure to have the blue mock Exam recording sheet in class as well

Hints About Paper 2

- There are 6 questions, a total of 90 marks.
 - A mark a minute is the general guideline recommended on the actual exams in May.
 - For each of the 6 questions, responses are written on **separate** lined paper or graph paper as appropriate. (so any writing you do on the sheets with the test questions will not be looked at).
 - GDC allowed.
 - Formula packet provided. *For this initial practice exam, you can also use the Purple Review Summary Sheets.*
 - The correct answer will not always be enough for all of the marks for each part of a question. Work is often required for the full marks. (if a question is only worth 1 point, no work will be required).
 - Work not required for correlation or for the LSRL
 - It will also not be required for standard deviation of grouped data.
 - Partial Method marks available on many questions.
 - Answers to be given to 3 significant figures unless it is otherwise stated or financial.
 - Unit penalty applies but only on random questions.
 - On the real test you will be given 5 minutes reading time at the start of the actual exam in May..... during which time you cannot write, but may read the questions. this is not part of the 90 minutes and should be used well.
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