VCE Mathematical Methods/Exam One Practice One

Instructions

Reading Time: 15 minutes **Writing Time:** 60 minutes

- Students are permitted to use: pencils, pens, highlighters, erasers, sharpeners, rulers, protractors, setsquares, aids for curve sketching
- Students are NOT permitted to use: blank sheets of paper, white-out, any type of technology
- Any diagrams used are NOT drawn to scale unless otherwise indicated
- Students must answer all the questions in the space provided
- In questions where more than one mark is available, appropriate working MUST be shown
- When instructed to use calculus, an appropriate derivative or anti-derivative MUST be shown

Questions

Question 1

(a) Given $e^{3x+1} - 1 = 0$, solve for x.

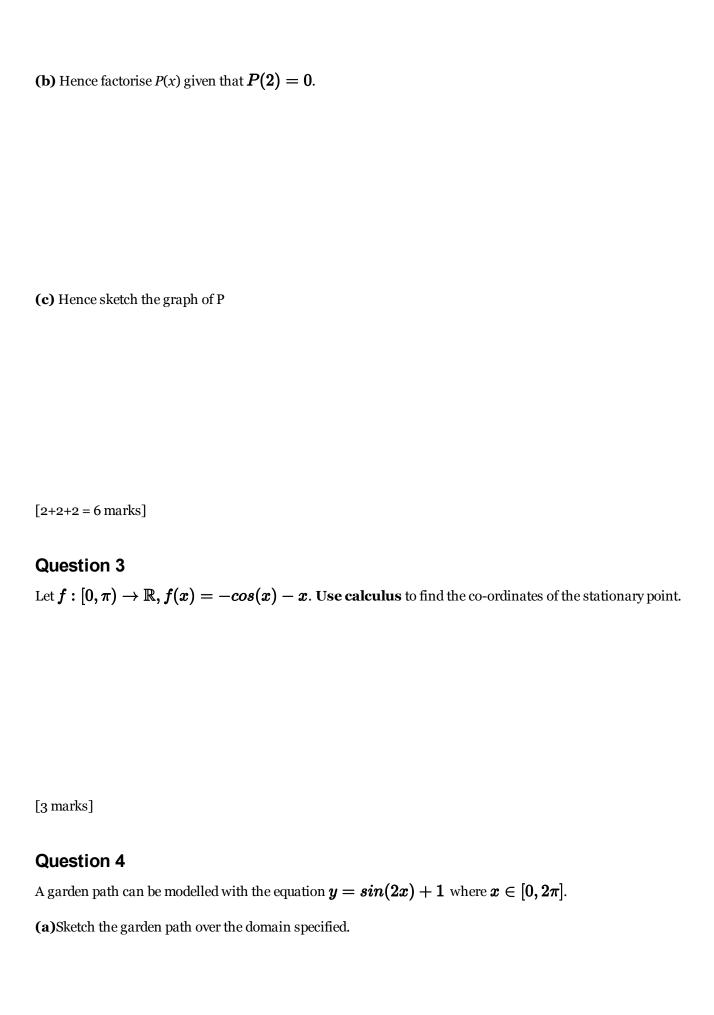
(b) If $f(x) = e^{3x+1} - 1$ and $g(x) = e^x$ state the transformations required to change g into f

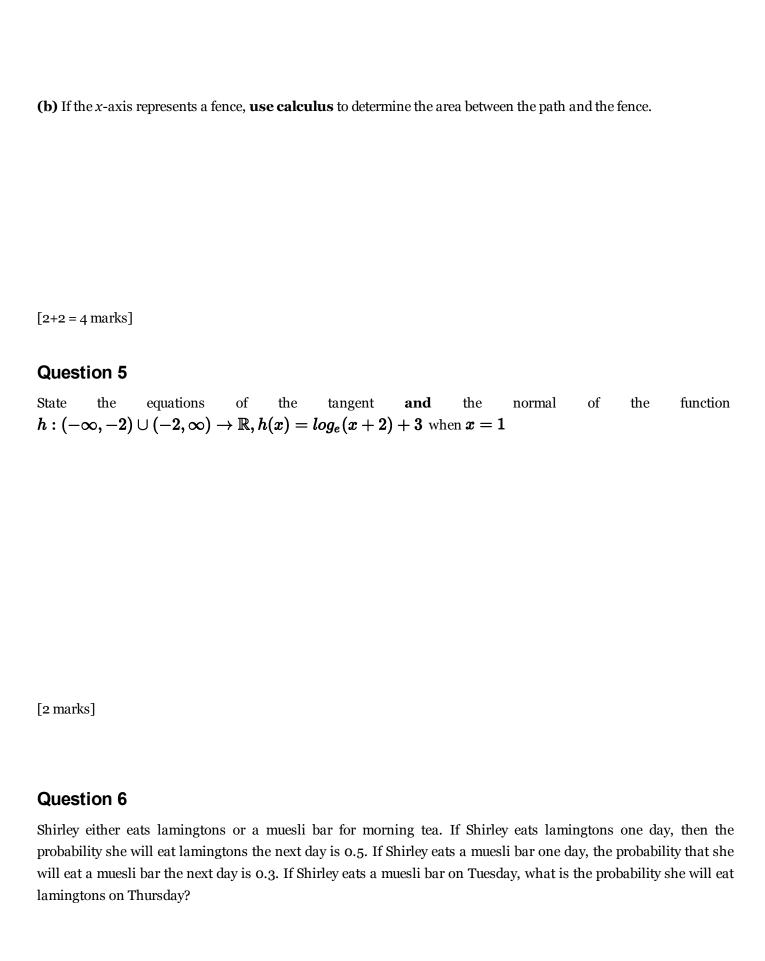
[1 + 2 = 3 marks]

Question 2

Let
$$P(x) = x^4 + 2x^3 - 9x^2 - 2x + 8$$
 and $Q(x) = x - 1$.

(a) Evaluate
$$\frac{P(x)}{Q(x)}$$





[2 marks]

Question 7

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This page was last edited on 16 August 2017, at 20:20.

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