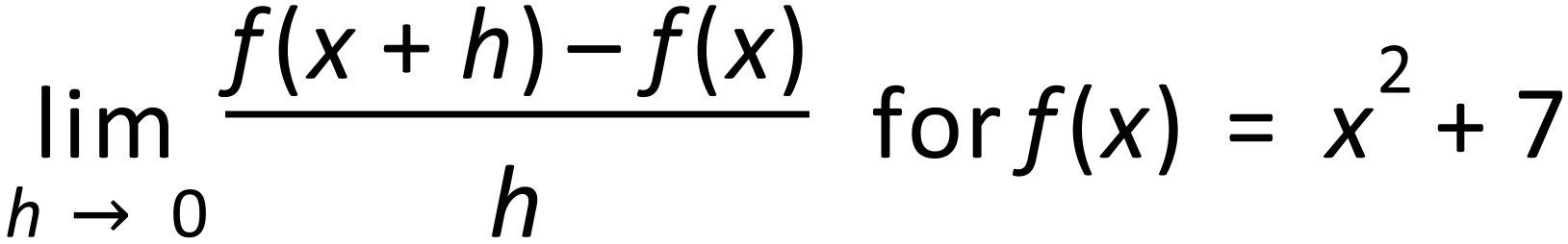
**Revision for Test 4 2019**

**Question 1** **(4 marks)**

Demonstrate your understanding of the “limiting chord process” to evaluate the following derivative.



**Question 2** **(2, 1, 1, 2 = 6 marks)**

(a) Determine when . (2 marks)

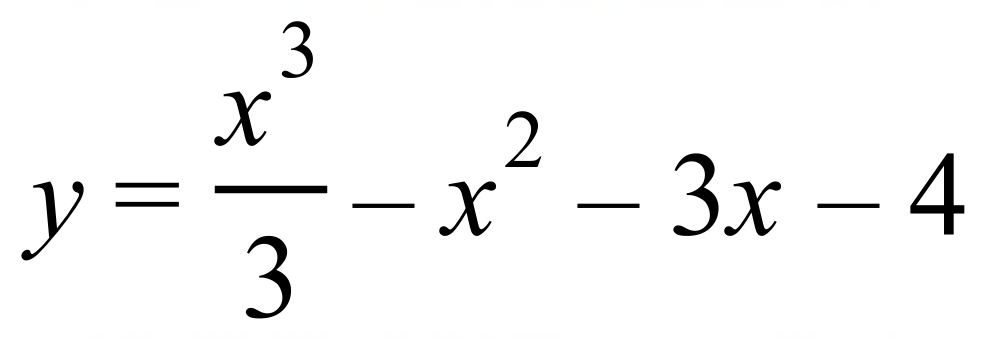
(b) Simplify

(i) . (1 mark)

(ii) . (1 mark)

(c) Calculate the gradient of the curve where . (2 marks)

**Question 3 (6 marks)**

Use Calculus techniques to determine the nature and location of any stationary point/s and sketch the curve  .   
Note: Estimate the x-intercepts as they will not be marked.

**Question 4** **(2, 2 = 4 marks)**

Find the antiderivative of the following. Do not simplify your answer.

|  |  |
| --- | --- |
| a) |  |
| b) |  |

