**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 $f'(x)$ when $f\left(x\right)=\left(x-5\right)^{2}$. (2 marks)

(b) Simplify

(i) $\frac{d}{dx}\left(5x^{2}-4x+3\right)$. (1 mark)

(ii) $\lim\_{h\to 0}\frac{\left(x+h\right)^{4}-x^{4}}{h}$. (1 mark)

(c) Calculate the gradient of the curve $y=2x^{5}-3x^{4}$ where $x=-1$. (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) |  |



























