

**Exercise 1**

Calc. : ✓

The function  $y = 2x^3 - 5x^2 - 4x + 2$  is defined for  $x \in \mathbb{R}$ .

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|-------------------------------------------------------------------------------------------------------------|---------|
| 1. Use differentiation to determine the $(x, y)$ coordinate for any stationary points of the function $y$ . | 2 marks |
| 2. Classify the nature of any stationary points in terms of local maxima or minima.                         | 3 marks |
| 3. Find the range of $x$ values for which the curve is increasing.                                          | 2 marks |
| 4. Find the equation of the tangent line at $x = 1$ .                                                       | 3 marks |