09	1d	Find the gradient of the tangent to the curve $y = x^4 - 3x$ at the point (1, -2).	2

State Mean: **1.69/2**

$$\begin{aligned} y &= x^4 - 3x \\ y' &= 4x^3 - 3 \\ y'(1) &= 4(1)^3 - 3 \\ &= 4 - 3 \\ &= 1 \end{aligned}$$

$\therefore$ the gradient is 1.

Board of Studies: Notes from the Marking Centre

Almost all candidates recognised that this part was a calculus question. Common errors were incorrect derivatives obtaining $y' = 4x - 3$ or $y' = 4x^3 - 3x$. The use of the derivative was also problematic with some responses attempting to calculate stationary points and others solving $4x^3 - 3 = -2$.

Source: **http://www.boardofstudies.nsw.edu.au/hsc_exams/**