Marked example 1

Paper 1 style · No calculator

1 4 marks SL 5.3 ●○○ Routine

Let $f(x) = 2x^3 - 5x + \frac{3}{x^2}$, for $x \neq 0$.

(a) Find $f'(x)$. **[3]**

(b) The point $P(1, 0)$ lies on the graph of f. Find the gradient of the graph of f at P. **[1]**

MARKSCHEME (a)

$\frac{3}{x^2} = 3x^{-2}$ seen or implied **(M1)**

$f'(x) = 6x^2 - 5 - 6x^{-3}$ **A1A1**

Total 3 marks

Note Award A1 for $6x^2 - 5$ and A1 for $-6x^{-3}$ (accept $-\frac{6}{x^3}$).

MARKSCHEME (b)

$f'(1) = 6 - 5 - 6 = -5$ **A1**

Total 1 mark

Note FT from their $f'(x)$.

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