THINKMATH CHALLENGE 1

Student Name:

Class: **Date:**   **Mark:** / 25

Answer ALL questions.

QUESTION 1:

Find the derivative for the following functions.

i) $y = \dfrac{3}{x^2} - 4\pi$ [2 marks]

ii) $y = \dfrac{2}{3}x^3 + 5x$ [2 marks]

iii) $y = \dfrac{7x^5 - 5x + 7}{x}$ [3 marks]

iv) $y = (12x + 17)^6$ [3 marks]

QUESTION 2:

Differentiate the following functions with respect to x:

i) $y = \sec\left(2x^2 - 1\right)$ [3 marks]

ii) $y = \ln\left(\cos x^2\right)$ [4 marks]

iii) $y = \dfrac{1}{15}\ln(5x + 1)^3$ [4 marks]

iv) $y = e^{3x}\left(e^{-5x} + 7\right)$ [4 marks]