Advanced Higher Maths
Maths.scot

(a) Differentiate $f(x) = x^6 \cot 5x$.   **2**

(b) Given $y = \dfrac{2x^3 + 1}{x^3 - 4}$, find $\dfrac{dy}{dx}$. Simplify your answer.   **3**

(c) For $f(x) = \cos^{-1} 2x$ evaluate $f'\left(\dfrac{\sqrt{3}}{4}\right)$.   **3**

Answers:

(a) $6x^5 \cot 5x - 5x^6 \csc^2 5x$

(b) $\dfrac{-27x^2}{\left(x^3 - 4\right)^2}$

(c) -4