Pure Maths, Differential Calculus, sheet PM-DIFF-DF-01

The Power Rule (Derivative Formula) Q. 6

differentiate $y = \dfrac{3}{4x^3}$

rewriting the equation as: $y = \dfrac{3}{4}x^{-3}$

applying the Power Rule

$$\frac{d}{dx}[x^n] = nx^{n-1}$$

$$\frac{dy}{dx} = \frac{3}{4} \cdot (-3)x^{-3-1}$$

simplifying $\dfrac{dy}{dx} = -\dfrac{9}{4}x^{-4}$

answer: $$\frac{dy}{dx} = -\frac{9}{4x^4}$$