

Problem 1

Find $\int \sin^2(x) \cos(x) dx$

Problem 2

Find $\int \sin^2(x^2) \cos(x^2) 2x dx$

Problem 3

Find $\frac{d}{dx} \left(\int_{\sin(x)}^{\sqrt{x}} \cos^2(t^5) dt \right)$

Problem 4

Find $\int \frac{x}{x^4 + 2x^2 + 1} dx$ (hint: factor)

Problem 5

Find $\int \sqrt[3]{x-3} x dx$