
Complete the following problems. Show all work to receive full credit.

1. Compute the following indefinite integrals:

$$\begin{aligned} \text{(a)} \quad \int x^3(x^4 - 1)^2 dx & \\ &= \frac{1}{12} (x^4 - 1)^3 + C \end{aligned}$$

$$\begin{aligned} \text{(b)} \quad \int \frac{6 \cos t}{(2 + \sin t)^3} dt & \\ &= -3(2 + \sin t)^{-2} + C \end{aligned}$$

$$\begin{aligned} \text{(c)} \quad \int \sin^5 \frac{x}{3} \cos \frac{x}{3} dx & \\ &= \frac{1}{2} \sin^6 \frac{x}{3} + C \end{aligned}$$

$$\begin{aligned} \text{(d)} \quad \int \sec(v + \pi) \tan(v + \pi) dv & \\ &= \sec(v + \pi) + C \end{aligned}$$