

1. Evaluate the definite integral

(a) $\int_1^8 \sqrt{\frac{2}{x}} \, dx$

(b) $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}} (2x + \cos x) \, dx$

(c) $\int_0^2 \frac{x}{\sqrt{1+2x^2}} \, dx$

(d) $\int \frac{x^3}{(1+x^4)^2} \, dx$