

Show all work and circle/box your final answer. All answers must be simplified unless stated otherwise.

1. Evaluate the following definite integrals:

(a) $\int_0^2 (2x - 3 + e^{2x}) dx$

(b) $\int_0^1 (x^2 + \sqrt{x}) dx$

(c) $\int_{-1}^1 (x + 1)^2 dx$

(d) $\int_1^e \frac{\ln x}{x} dx$

(e) $\int_4^5 2x\sqrt{x^2 - 16} dx$

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