

Sections 5.1 - 5.2

1. Find the general indefinite integral.

(a) $\int 2t - 3 \, dt$

(b) $\int 44 - 10x \, dx$

(c) $\int x^3 - 3x^2 + x \, dx$

(d) $\int 10x(x^2 - 3)^4 \, dx$

(e) $\int \frac{e^{\sqrt{x}}}{\sqrt{x}} dx$

(f) $\int \frac{(\frac{2}{x}+4)^5}{x^2} dx$

Section 5.3

2. Evaluate the integral.

(a) $\int_2^4 \frac{(\frac{2}{x}+4)^5}{x^2} dx$

(b) $\int_{-1}^2 2x - 6x^2 dx$

(c) $\int_1^3 1 + \frac{1}{x} + \frac{1}{x^2} dx$

(d) $\int_1^{e^2} \frac{x}{x-1} dx$

(e) $\int_e^{e^2} \frac{1}{x \ln x} dx$

3. $f(x)$ is a function that is continuous on $[-5,5]$ and satisfies

$$\int_{-3}^2 f(x) \, dx = 5, \quad \int_{-3}^1 f(x) \, dx = 0.$$

Evaluate the integral.

(a) $\int_{-3}^2 4f(x) + 1 \, dx$

(b) $\int_1^2 f(x) + x \, dx$