



Subject: Calculus

Chapter: Unit 3

Category: Practice questions

Evaluate the given integrals

$$1. \int z^7 - 48z^{11} - 5z^{16} dz$$

$$2. \int \sqrt{x^7} - 7\sqrt[6]{x^5} + 17\sqrt[3]{x^{10}} dx$$

$$3. \int \frac{7}{3y^6} + \frac{1}{y^{10}} - \frac{2}{\sqrt[3]{y^4}} dy$$

$$4. \int \frac{z^8 - 6z^5 + 4z^3 - 2}{z^4} dz$$

$$5. \int t^3 - \frac{e^{-t} - 4}{e^{-t}} dt$$

$$6. \text{ Determine } f(x) \text{ given that } f'(x) = 12x^2 - 4x \text{ and } f(-3) = 17.$$

$$7. \int (7y - 2y^3)e^{y^4 - 7y^2} dy$$

$$8. \int_{-2}^1 5z^2 - 7z + 3 dz$$

$$9. \int_1^4 \frac{8}{\sqrt{t}} - 12\sqrt{t^3} dt$$

$$10. \text{ Evaluate the following integral } \int_0^4 f(t) dt \text{ where } f(t) = \begin{cases} 2t & t > 1 \\ 1 - 3t^2 & t \leq 1 \end{cases}$$

$$11. \int_{-1}^2 x^3 + e^{\frac{1}{4}x} dx$$

$$12. \text{ Use an appropriate change of variables to find the integral } \int (x+1)(x-2)^9 dx$$

13. $\int x^3 e^{2x} dx$

14. $\int \frac{1}{\sqrt{x^2+2x-3}} dx$

15. $\int_{\ln \frac{1}{2}}^2 (e^t - e^{-t}) dt$



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