

Section 5-2 : Computing Indefinite Integrals

For problems 1 – 21 evaluate the given integral.

1. $\int 4x^6 - 2x^3 + 7x - 4 dx$

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

3. $\int 10t^{-3} + 12t^{-9} + 4t^3 dt$

4. $\int w^{-2} + 10w^{-5} - 8 dw$

5. $\int 12 dy$

6. $\int \sqrt[3]{w} + 10 \sqrt[5]{w^3} dw$

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

8. $\int \frac{4}{x^2} + 2 - \frac{1}{8x^3} dx$

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

10. $\int (t^2 - 1)(4 + 3t) dt$

11. $\int \sqrt{z} \left(z^2 - \frac{1}{4z} \right) dz$

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

13. $\int \frac{x^4 - \sqrt[3]{x}}{6\sqrt{x}} dx$

14. $\int \sin(x) + 10 \csc^2(x) dx$

$$15. \int 2 \cos(w) - \sec(w) \tan(w) dw$$

$$16. \int 12 + \csc(\theta) [\sin(\theta) + \csc(\theta)] d\theta$$

$$17. \int 4e^z + 15 - \frac{1}{6z} dz$$

$$18. \int t^3 - \frac{e^{-t} - 4}{e^{-t}} dt$$

$$19. \int \frac{6}{w^3} - \frac{2}{w} dw$$

$$20. \int \frac{1}{1+x^2} + \frac{12}{\sqrt{1-x^2}} dx$$

$$21. \int 6 \cos(z) + \frac{4}{\sqrt{1-z^2}} dz$$

22. Determine $f(x)$ given that $f'(x) = 12x^2 - 4x$ and $f(-3) = 17$.

23. Determine $g(z)$ given that $g'(z) = 3z^3 + \frac{7}{2\sqrt{z}} - e^z$ and $g(1) = 15 - e$.

24. Determine $h(t)$ given that $h''(t) = 24t^2 - 48t + 2$, $h(1) = -9$ and $h(-2) = -4$.

