

Evaluate the indefinite integral. Check your result by differentiation.

1) $\int 3x^4 dx$

2) $\int \frac{1}{x^3} dx$

3) $\int 5u^{3/2} du$

4) $\int \frac{2}{3\sqrt{x}} dx$

5) $\int 6t^2 \sqrt[3]{t} dt$

6) $\int y^3(2y^2 - 3)dy$

11) $\int \left(\sqrt[3]{x} + \frac{1}{\sqrt[3]{x}} \right) dx$

7) $\int (8x^4 + 4x^3 - 6x^2 - 4x + 5)dx$

12) $\int (3 \sin t - 2 \cos t)dt$

8) $\int \sqrt{x}(x + 1)dx$

13) $\int (4 \csc x \cot x + 2 \sec^2 x)dx$

9) $\int \left(\frac{2}{x^3} + \frac{3}{x^2} + 5 \right) dx$

10) $\int \frac{x^2 + 4x - 4}{\sqrt{x}} dx$