



## Problem Set 30: Basic Rules of Integration

Find the integral of the following:

1.  $\int 4x \, dx$

2.  $\int x^3 \, dx$

3.  $\int (3x^2 - 4x + 1) \, dx$

4.  $\int \frac{dx}{x^2}$

5.  $\int 2\sqrt{x} \, dx$

6.  $\int \frac{3}{2\sqrt{x}} \, dx$

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$$7. \int \frac{4}{9} x^{5/3} dx$$

$$8. \int \frac{x^2 + 3x - 2x^5}{x} dx$$

$$9. \int \cos x dx$$

$$10. \int \frac{\sin x dx}{\pi}$$

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11.  $\int \sec^2 x \, dx$

12.  $\int \csc x \cot x \, dx$

13.  $\int \frac{dx}{\sin^2 x}$

14.  $\int \frac{\sec x \tan x}{8} \, dx$