

# 500 Integration Practice Problems

By Sangharsha “noob6t5”

1.  $\int x^n dx$
2.  $\int (ax + b)^n dx$
3.  $\int e^{ax} dx$
4.  $\int a^x dx$
5.  $\int \sin(ax) dx$
6.  $\int \cos(ax) dx$
7.  $\int \tan(ax) dx$
8.  $\int \sec^2(ax) dx$
9.  $\int \sec(ax) \tan(ax) dx$
10.  $\int \ln(x) dx$
11.  $\int x \ln(x) dx$
12.  $\int \frac{1}{ax+b} dx$
13.  $\int \frac{x}{x^2+a^2} dx$
14.  $\int \frac{1}{x^2+a^2} dx$
15.  $\int \frac{1}{x^2-a^2} dx$
16.  $\int \sqrt{x^2 + a^2} dx$
17.  $\int \sqrt{a^2 - x^2} dx$
18.  $\int x e^{ax} dx$
19.  $\int x \sin(ax) dx$
20.  $\int x \cos(ax) dx$
21.  $\int \frac{x^2+1}{x^3+3x} dx$
22.  $\int \frac{2x+1}{x^2+x+1} dx$
23.  $\int \sin^2(x) dx$
24.  $\int \cos^2(x) dx$
25.  $\int \sin^3(x) dx$

- 26.  $\int \cos^3(x) \, dx$
- 27.  $\int x^n \, dx$
- 28.  $\int (ax + b)^n \, dx$
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- 38.  $\int \frac{1}{ax+b} \, dx$
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- 42.  $\int \sqrt{x^2 + a^2} \, dx$
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458.  $\int \sqrt{x^2+a^2} dx$   
459.  $\int \sqrt{a^2-x^2} dx$

460.  $\int x e^{ax} dx$
461.  $\int x \sin(ax) dx$
462.  $\int x \cos(ax) dx$
463.  $\int \frac{x^2+1}{x^3+3x} dx$
464.  $\int \frac{2x+1}{x^2+x+1} dx$
465.  $\int \sin^2(x) dx$
466.  $\int \cos^2(x) dx$
467.  $\int \sin^3(x) dx$
468.  $\int \cos^3(x) dx$
469.  $\int x^n dx$
470.  $\int (ax+b)^n dx$
471.  $\int e^{ax} dx$
472.  $\int a^x dx$
473.  $\int \sin(ax) dx$
474.  $\int \cos(ax) dx$
475.  $\int \tan(ax) dx$
476.  $\int \sec^2(ax) dx$
477.  $\int \sec(ax) \tan(ax) dx$
478.  $\int \ln(x) dx$
479.  $\int x \ln(x) dx$
480.  $\int \frac{1}{ax+b} dx$
481.  $\int \frac{x}{x^2+a^2} dx$
482.  $\int \frac{1}{x^2+a^2} dx$
483.  $\int \frac{1}{x^2-a^2} dx$
484.  $\int \sqrt{x^2+a^2} dx$
485.  $\int \sqrt{a^2-x^2} dx$
486.  $\int x e^{ax} dx$
487.  $\int x \sin(ax) dx$
488.  $\int x \cos(ax) dx$
489.  $\int \frac{x^2+1}{x^3+3x} dx$
490.  $\int \frac{2x+1}{x^2+x+1} dx$



$$491. \int \sin^2(x) \, dx$$

$$492. \int \cos^2(x) \, dx$$

$$493. \int \sin^3(x) \, dx$$

$$494. \int \cos^3(x) \, dx$$

$$495. \int x^n \, dx$$

$$496. \int (ax + b)^n \, dx$$

$$497. \int e^{ax} \, dx$$

$$498. \int a^x \, dx$$

$$499. \int \sin(ax) \, dx$$

$$500. \int \cos(ax) \, dx$$