Examples:

1. $\int 5x^4\,dx = 5\int x^4 dx$
$5\left(\frac{x^5}{5}+C\right)$
x^5+C

2. $\int x^5\,dx = \frac{x^6}{6}+C$
$\frac{1}{6}x^6+C$

3. $\int \frac{1}{x^4}\,dx = \int x^{-4}dx$
$\frac{x^{-3}}{-3}+C$
$-\frac{1}{3x^3}+C$

4. $\int 3x^4\,dx = 3\int x^4 dx$
$3\left(\frac{x^5}{5}+C\right)$
$\frac{3x^5}{5}+C$
$\frac{3}{5}x^5+C$

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5. $\int 5\sin x\,dx = 5\int \sin x\,dx$
$5(-\cos x + C)$
$-5\cos x + C$

6. $\int (3x^4 - 3x^2 + x)\,dx$
$\int 3x^4dx - \int 3x^2dx + \int x\,dx$
$3\int x^4dx - 3\int x^2dx + \int x\,dx$
$3\left(\frac{x^5}{5}\right) - 3\left(\frac{x^3}{3}\right) + \frac{x^2}{2}+C$
$\frac{3}{5}x^5 - x^3 + \frac{1}{2}x^2 + C$

7. $\int \frac{5}{x}\,dx = 5\int \frac{1}{x}\,dx$
$5\ln|x|+C$

8. $\int (t^2+1)^2\,dt$
$\int (t^4+2t^2+1)\,dt$
$\int t^4dt + 2\int t^2dt + \int 1\,dt$
$\frac{t^5}{5}+\frac{2}{3}t^3+t+C$

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9. $\int \frac{x^3+3}{x^2}\,dx$
$\int \left(\frac{x^3}{x^2}+\frac{3}{x^2}\right)dx$
$\int (x+3x^{-2})\,dx$
$\int x\,dx + 3\int x^{-2}dx$
$\frac{x^2}{2}+3\frac{x^{-1}}{-1}+C$
$\frac{1}{2}x^2-\frac{3}{x}+C$

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