

W9 - P1

Integrate [x^7, x] + C

$$C + \frac{x^8}{8}$$

Integrate [$2y^5, y$] + C

$$C + \frac{y^6}{3}$$

Integrate [$x^{1.3}, x$] + C

$$C + 0.434783 x^{2.3}$$

Integrate [$\frac{4}{g^5} - \frac{3}{g^2}, g$] + C

$$C - \frac{1}{g^4} + \frac{3}{g}$$

Integrate [$\sqrt{x^7}, x$] + C

$$C + \frac{2x\sqrt{x^7}}{9}$$

Integrate [Cos [4 t], t] + C

$$C + \frac{1}{4} \text{Sin}[4 t]$$

Integrate [$\varphi^4 - \text{Sin}[2 \varphi], \varphi$] + C

$$C + \frac{\varphi^5}{5} + \frac{1}{2} \text{Cos}[2 \varphi]$$

Integrate [$\frac{5}{z} + \text{Exp}[4 z], z$] + C

$$C + \frac{e^{4z}}{4} + 5 \text{Log}[z]$$

Integrate [$\xi (\xi + a) (\xi + b), \xi$] + C // Expand

$$C + \frac{1}{2} a b \xi^2 + \frac{a \xi^3}{3} + \frac{b \xi^3}{3} + \frac{\xi^4}{4}$$

W9 - P2

Assuming [$t > 0$, Integrate [n F A c $\sqrt{\frac{d}{\pi t}}$, t] + C // FullSimplify]

$$C + \frac{2 A c F n \sqrt{d t}}{\sqrt{\pi}}$$

W9 - P3

`Integrate[Cos[3 x]^2, {x, 0, π/2}]`

$\frac{\pi}{4}$

`Integrate[Sin[2 φ] Cos[2 φ], {φ, 0, π/2}]`

0

`Integrate[Sin[α] Cos[2 α], {α, 0, π}]`

$-\frac{2}{3}$

W9 - P4

`ψ[k_, x_] := √[2/L] Sin[π k x/L];`

`Assuming[L > 0 && n ∈ Integers && n > 0 && m ∈ Integers && m > 0 && m == n,`
`Integrate[ψ[n, x] ψ[m, x], {x, 0, L}]`

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`Assuming[L > 0 && n ∈ Integers && n > 0 && m ∈ Integers && m > 0 && m ≠ n,`
`Integrate[ψ[n, x] ψ[m, x], {x, 0, L}]`

0

W9 - P5

`Integrate[1/(x^2 - 9), x] + C`

$C + \frac{1}{6} \text{Log}[3 - x] - \frac{1}{6} \text{Log}[3 + x]$

`Integrate[1/(x^2 + 4), x] + C`

$C + \frac{1}{2} \text{ArcTan}\left[\frac{x}{2}\right]$

`Integrate[(x + 1)/(2 x + 1), x] + C`

$C + \frac{1}{4} (1 + 2 x + \text{Log}[1 + 2 x])$