

# Integrals

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$$> \text{int}((4x - 3)^9, x)$$

$$\frac{1}{40} (4x - 3)^{10} \quad (1)$$

$$> \text{int}(x^3 \sqrt{5 + x^4}, x)$$

$$\frac{1}{6} (x^4 + 5)^{3/2} \quad (2)$$

$$> \text{int}(\sin(7x), x)$$

$$-\frac{1}{7} \cos(7x) \quad (3)$$

$$> \text{int}(\sec(4x) \tan(4x), x)$$

$$\frac{1}{4} \sec(4x) \quad (4)$$

$$> \text{int}\left(\frac{1}{\sqrt{1 - 4x^2}}, x\right)$$

$$\frac{1}{2} \arcsin(2x) \quad (5)$$

$$> \text{int}\left(\frac{1}{1 + 16x^2}, x\right)$$

$$\frac{1}{4} \arctan(4x) \quad (6)$$

$$> \text{int}(t \cdot \sqrt{7t^2 + 12}, t)$$

$$\frac{1}{21} (7t^2 + 12)^{3/2} \quad (7)$$

$$> \text{int}(\exp(1)^{\sin(x)} \cos(x), x)$$

$$(e)^{\sin(x)} \quad (8)$$

$$> \text{int}(x^2 \cdot \exp(1)^{-2x^3}, x)$$

$$-\frac{1}{6} (e)^{-2x^3} \quad (9)$$

$$> \text{int}\left(\frac{\sin\left(\frac{1}{x}\right)}{3x^2}, x\right)$$

$$\frac{1}{3} \cos\left(\frac{1}{x}\right) \quad (10)$$

$$> \text{int}\left(\frac{x}{\sqrt{4 - 5x^2}}, x\right)$$

$$-\frac{1}{5} \sqrt{-5x^2 + 4} \quad (11)$$

$$\begin{aligned} &> \text{int}\left(\frac{6}{(1-2x)^3}, x\right) \\ &= \frac{3}{2(1-2x)^2} \end{aligned} \quad (12)$$

$$\begin{aligned} &> \text{int}(x^3 \cdot \exp(1)^{x^4}, x) \\ &= \frac{1}{4} (e)^{x^4} \end{aligned} \quad (13)$$

$$\begin{aligned} &> \text{int}(x \cdot \sec(x^2)^2, x) \\ &= \frac{1}{2} \frac{\sin(x^2)}{\cos(x^2)} \end{aligned} \quad (14)$$

$$\begin{aligned} &> \text{int}(\cos(3t)^4 \sin(3t), t) \\ &= -\frac{1}{15} \cos(3t)^5 \end{aligned} \quad (15)$$

$$\begin{aligned} &> \text{int}\left(\frac{\exp(1)^x + \exp(1)^{-x}}{\exp(1)^x - \exp(1)^{-x}}, x\right) \\ &= \ln((e)^x - (e)^{-x}) \end{aligned} \quad (16)$$

$$\begin{aligned} &> \text{int}(\cos(4\theta) \sqrt{2 - \sin(4\theta)}, \theta) \\ &= -\frac{1}{6} (2 - \sin(4\theta))^{3/2} \end{aligned} \quad (17)$$

$$\begin{aligned} &> \text{int}(\sec(2x)^3 \tan(2x), x) \\ &= \frac{1}{6} \sec(2x)^3 \end{aligned} \quad (18)$$

$$\begin{aligned} &> \text{int}(\sin(2\theta)^3, \theta) \\ &= -\frac{1}{6} \sin(2\theta)^2 \cos(2\theta) - \frac{1}{3} \cos(2\theta) \end{aligned} \quad (19)$$

$$\begin{aligned} &> \text{int}(\sec(3\theta)^4, \theta) \\ &= \frac{1}{9} \frac{\sin(3\theta)}{\cos(3\theta)^3} + \frac{2}{9} \frac{\sin(3\theta)}{\cos(3\theta)} \end{aligned} \quad (20)$$

$$\begin{aligned} &> \text{int}(x \cdot \exp(1)^{-2x}, x) \\ &= -\frac{1}{4} (2x+1) (e)^{-2x} \end{aligned} \quad (21)$$

$$\begin{aligned} &> \text{int}(x \cdot \sin(3x), x) \\ &= \frac{1}{9} \sin(3x) - \frac{1}{3} x \cos(3x) \end{aligned} \quad (22)$$

$$\begin{aligned} &> \text{int}(x^2 \cdot \exp(1)^x, x) \\ &= (x^2 - 2x + 2) (e)^x \end{aligned} \quad (23)$$

$$\begin{aligned} &> \text{int}(\ln(3x-2), x) \\ &= \frac{1}{3} \ln(3x-2) (3x-2) - x + \frac{2}{3} \end{aligned} \quad (24)$$

$$> \text{int}(x^2 \cos(x), x)$$

	$x^2 \sin(x) - 2 \sin(x) + 2 x \cos(x)$	(25)
> $\text{int}(x \cdot \exp(1)^{3x}, x)$	$\frac{1}{9} (3 x - 1) (e)^{3x}$	(26)
> $\text{int}(x \cdot \ln(x), x)$	$\frac{1}{2} x^2 \ln(x) - \frac{1}{4} x^2$	(27)
> $\text{int}(\exp(1)^x \sin(x), x)$	$-\frac{1}{2} e^x \cos(x) + \frac{1}{2} e^x \sin(x)$	(28)
> $\text{int}(x \cdot \sec(x)^2, x)$	$\tan(x) x + \ln(\cos(x))$	(29)
> $\text{int}(\sqrt{x} \ln(x), x)$	$\frac{2}{3} x^{3/2} \ln(x) - \frac{4}{9} x^{3/2}$	(30)
> $\text{int}(\arcsin(x), x)$	$x \arcsin(x) + \sqrt{-x^2 + 1}$	(31)
> $\text{int}(x \cdot \cos(2 x), x)$	$\frac{1}{4} \cos(2 x) + \frac{1}{2} x \sin(2 x)$	(32)
> $\text{int}(x \cdot \arctan(x), x)$	$\frac{1}{2} \arctan(x) x^2 - \frac{1}{2} x + \frac{1}{2} \arctan(x)$	(33)
> $\text{int}(\sin(\ln(x)), x)$	$-\frac{1}{2} \cos(\ln(x)) x + \frac{1}{2} \sin(\ln(x)) x$	(34)
> $\text{int}(x \cdot \tan(x)^2, x)$	$\tan(x) x - \frac{1}{2} x^2 - \frac{1}{2} \ln(1 + \tan(x)^2)$	(35)
> $\text{int}(x^3 \cdot \exp(1)^{x^2}, x)$	$\frac{1}{2} (x^2 - 1) (e)^{x^2}$	(36)
> $\text{int}(\ln(x + 2), x = -1 .. 1, \text{numeric} = \text{false})$	$-2 + 3 \ln(3)$	(37)
> $\text{int}(\exp(1)^{3x} \cos(2 x), x)$	$\frac{3}{13} e^{3x} \cos(2 x) + \frac{2}{13} e^{3x} \sin(2 x)$	(38)
> $\text{int}(\ln(x)^2, x)$	$\ln(x)^2 x - 2 x \ln(x) + 2 x$	(39)
> $\text{int}(x + x \cdot \cos(x), x = 0 .. \pi, )$	$-1 + \frac{1}{2} \pi^2 + \cos(\pi) + \pi \sin(\pi)$	(40)