```
D[x^5, a]
```

```
0
```

```
D[x^n, x]
```

$$n\, x^{-1+n}$$

```
D[Sin[x]^10, {x, 3}]
```

$$720 \cos[x]^3 \sin[x]^7 - 280 \cos[x] \sin[x]^9$$

```
D[Exp[x]^8, {x, 7}]
```

$$2\,097\,152\, e^{8x}$$

```
D[Cosh[5 x + 3], {x, 6}]
```

$$15\,625 \cosh[3 + 5x]$$

```
Limit[Sin[x] / x, x -> 0]
```

```
1
```

```
Limit[(x - Sin[x])/x^3, x -> 0]
```

$$\frac{1}{6}$$

```
Limit[(Sin[x] - Sin[a])/(Tan[x] - Tan[a]), x → a]
```

$$\cos[a]^3$$

```
Limit[Sin[x]^x, x -> 0]
```

```
1
```

```
Limit[(1 + 1/x)^x, x → Infinity]
```

$$e$$

```
Limit[Sqrt[x^2 - 3 x + 1] - Sqrt[3 x^2 + 5 x - 7], x → Infinity]
```

$$-\infty$$

```
Limit[Sqrt[3 x^2 - 3 x + 1] - Sqrt[3 x^2 + 5 x - 7], x → ∞]
```

$$-\frac{4}{\sqrt{3}}$$

```
Limit[(1 + 5 x)^(1/x), x -> 0]
```

$$e^5$$

```
Limit[x Sin[ 1/x ], x → 0]
```

```
0
```

```
Integrate[1 / (x^3 + 1), x]
```

$$\frac{\text{ArcTan}\left[\frac{-1+2x}{\sqrt{3}}\right]}{\sqrt{3}} + \frac{1}{3}\text{Log}[1+x] - \frac{1}{6}\text{Log}[1-x+x^2]$$

$$\int_{lower}^{upper} expr \, dvar$$

```
∫_0^∞ Exp[-x^2] dx
```

$$\frac{\sqrt{\pi}}{2}$$

```
∫_0^(π/3) Cos[x] Sin[5 x] dx
```

$$\frac{3}{16}$$

$$\int \frac{expr}{\square} \, dvar$$

```
∫ 1/(1 + x^2) dx
```

```
ArcTan[x]
```

```
∫ Log[x] dx
```

```
-x + x Log[x]
```

```
∫ Sin[x]^3/Cos[x]^5 dx
```

$$\frac{\text{Tan}[x]^4}{4}$$

```
∫_-2^5 Abs[x - 3] dx
```

```
Limit[(Floor[x]^2 - 9)/(Floor[x] - 3), x → 3]
```

```
Floor[2.7, 1]
```

6

2

```
∂y (x^Sinh[Log[y]])
```

$$x^{\frac{-1+y^2}{2y}} \left(1 - \frac{-1+y^2}{2y^2}\right) \text{Log}[x]$$

```
∂x (x^4 y + 5 x.y^5)
```

$4 x^3 y + 5 \times 1. y^5$

```
∂y (x^4 y + 5 x.y^5)
```

```
^
```

$x^4 + 5 x. \left(5 y^4\right)$

```
∂x Log[1/(x^2 + 4 y^2)]
```

$$-\frac{2x}{x^2+4y^2}$$

```
∂y x
```

```
f[x_] := x^6
```

```
f[3]
```

729

```
f[3 x]
```

$729 x^6$

```
g[x_] := Sin[x]
```

```
g[π/3]
```

$$\frac{\sqrt{3}}{2}$$

```
N[f[2/5] + g[5 π/8], 20]
```

0.92797553251128675613

```
Clear[f]
```

$$f[x\_] := \int_{x^2}^{\text{ArcTan}[x]} \frac{\text{Sin}[t]}{t}\, dt$$

$$D\left[\int_{x^2}^{\text{ArcTan}[x]} \frac{\text{Sin}[t]}{t}\, dt,\ x\right]$$

$$-2\,x\,\text{Sinc}\left[x^2\right] + \frac{\text{Sinc}[\text{ArcTan}[x]]}{1+x^2}$$

$$-2\,x\,\text{Sinc}\left[x^2\right] + \frac{\text{Sinc}[\text{ArcTan}[x]]}{1+x^2}$$

$$\partial_x f[x]$$

$$-2\,x\,\text{Sinc}\left[x^2\right] + \frac{\text{Sinc}[\text{ArcTan}[x]]}{1+x^2}$$