

$$y = a^x \quad y = \log_a x \quad a > 0 \quad a \neq 1$$

$$y = x \quad y = x^2 \quad y = x^3 \quad y = \frac{1}{x} \quad y = x^{\frac{1}{2}}$$

$$\begin{aligned}
 & y = \sin x \quad y = \cos x \quad y = \tan x \\
 & x \in [0, 2\pi] \\
 & \sin^2 x + \cos^2 x = 1 \quad \frac{\sin x}{\cos x} = \tan x
 \end{aligned}$$

$$y = A \sin(x)$$

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A

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$$y = C_1 + C_2 \quad y = x \quad y = x^2 \quad y = x^3 \quad y = \frac{1}{x} \quad y = \sqrt{x}$$

$$f(ax + b)$$

$$\begin{aligned} (C) & 0 \quad C \quad (x^n) \quad nx^{n-1} \quad n \in \mathbf{N} \\ (\sin x) & \cos x \quad (\cos x) \quad -\sin x \\ (e^x) & e^x \quad (a^x) \quad a^x \ln a \quad a > 0 \quad a \neq 1 \\ (\ln x) & \frac{1}{x} \quad (\log_a x) \quad \frac{1}{x} \log_a e \quad a > 0 \quad a \neq 1 \end{aligned}$$

$$[u(x) \pm v(x)]' = u'(x) \pm v'(x)$$

$$[u(x)v(x)]' = u'(x)v(x) + u(x)v'(x)$$

$$\frac{u(x)}{v(x)} = \frac{u'(x)v(x) - u(x)v'(x)}{v^2(x)} \quad v(x) \neq 0$$

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$$\sum_{i=1}^n a_i^2 + \sum_{i=1}^n b_i^2 = \left(\sum_{i=1}^n a_i b_i \right)^2$$

$$(1-x)^n = \sum_{k=0}^n \binom{n}{k} (-x)^k$$