

$$\frac{d}{dx}(c)$$

A

$$\frac{d}{dx}(x^n)$$

A

$$\frac{d}{dx}(e^x)$$

A

$$\frac{d}{dx}(a^x)$$

A

$$\frac{d}{dx}(\ln x)$$

A

$$\frac{d}{dx}(\log_a x)$$

A

$$\frac{d}{dx}(\sin x)$$

A

$$\frac{d}{dx}(\cos x)$$

A

$$\frac{d}{dx}(\tan x)$$

A

$$\frac{d}{dx}(\csc x)$$

A

$$\frac{d}{dx}(\sec x)$$

A

$$\frac{d}{dx}(\cot x)$$

A

$$\frac{d}{dx}(\sin^{-1} x)$$

A

$$\frac{d}{dx}(\cos^{-1} x)$$

A

$$\frac{d}{dx}(\tan^{-1} x)$$

A

$$e^x$$

$$nx^{n-1}$$

$$0$$

$$\text{(ex: } \frac{d}{dx}(x^{12}) = 12x^{11}\text{)}$$

$$\frac{1}{x \ln a}$$

$$\frac{1}{x}$$

$$a^x \ln a$$

$$\text{(ex: } \frac{d}{dx}(\log_2 x) = \frac{1}{x \ln 2}\text{)}$$

$$\text{(ex: } \frac{d}{dx}(2^x) = 2^x \ln 2\text{)}$$

$$\sec^2 x$$

$$-\sin x$$

$$\cos x$$

$$-\csc^2 x$$

$$\sec x \tan x$$

$$-\csc x \cot x$$

$$\frac{1}{1+x^2}$$

$$-\frac{1}{\sqrt{1-x^2}}$$

$$\frac{1}{\sqrt{1-x^2}}$$

$$\frac{d}{dx}(\sinh x)$$

A

$$\frac{d}{dx}(\cosh x)$$

A

$$\frac{d}{dx}(\tanh x)$$

A

$$\sinh x =$$

B

$$\cosh x =$$

B

$$\tanh x =$$

B

$$\operatorname{csch} x =$$

B

$$\operatorname{sech} x =$$

B

$$\operatorname{coth} x =$$

B

$$\cosh^2 x - \sinh^2 x =$$

B

$$(cf)' =$$

C

$$(f \pm g)' =$$

C

$$(fg)' =$$

C

$$\left(\frac{f}{g}\right)' =$$

C

**Definition of
the derivative**

C

$$\operatorname{sech}^2 x$$

$$\sinh x$$

$$\cosh x$$

$$\frac{\sinh x}{\cosh x}$$

$$\frac{e^x + e^{-x}}{2}$$

$$\frac{e^x - e^{-x}}{2}$$

$$\frac{\cosh x}{\sinh x}$$

$$\frac{1}{\cosh x}$$

$$\frac{1}{\sinh x}$$

$$f' \pm g'$$

$$cf'$$

$$1$$

$$f'(x) =$$

$$\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

$$\frac{gf' - fg'}{g^2}$$

$$fg' + f'g$$

$$\sum_{i=1}^n i =$$

D

$$\sum_{i=1}^n i^2 =$$

D

$$\sum_{i=1}^n i^3 =$$

D

$$\int_b^a f(x) dx =$$

D

$$\int_a^a f(x) dx =$$

D

$$\int_a^b kf(x) dx =$$

D

$$\int_a^b (f(x) \pm g(x)) dx =$$

D

$$\int_a^b f(x) dx + \int_b^c f(x) dx =$$

D

$$\frac{d}{dx} \int_a^x f(t) dt =$$

D

$$\int_a^b f(x) dx =$$

D

$$\int u dv =$$

D

Rolle's Theorem

E

Mean Value Theorem

E

$$\left(\frac{n(n+1)}{2}\right)^2$$

$$\frac{n(n+1)(2n+1)}{6}$$

$$\frac{n(n+1)}{2}$$

$$k \int_a^b f(x) dx$$

$$0$$

$$-\int_a^b f(x) dx$$

$$f(x)$$

$$\int_a^c f(x) dx$$

$$\int_a^b f(x) dx \pm \int_a^b g(x) dx$$

Suppose that

1. $f(x)$ is continuous on $[a, b]$,
2. $f(x)$ is differentiable on (a, b) ,
3. $f(a) = f(b)$.

Then there is at least one number c in (a, b) at which $f'(c) = 0$.

$$uv - \int v du$$

$$F(b) - F(a)$$

Suppose that

1. $f(x)$ is continuous on $[a, b]$,
2. $f(x)$ is differentiable on (a, b) .

Then there is at least one point c in (a, b) at which

$$\frac{f(b) - f(a)}{b - a} = f'(c)$$