

Q070401

微分せよ

[1] $\frac{x}{x+1}$

[2] $\frac{1}{x^2}$

Sheet [1] $y' = \quad$:: 2 [2] $y' = \quad$:: 2

Ans

[1] $\frac{1}{(x+1)^2}$

[2] $-\frac{2}{x^3}$

Q070402

問いに答えよ

 $\square (x^{\frac{1}{3}})'$ を求めよ ヒント $w^3 - u^3 = (w - u)(w^2 + wu + u^2)$ Sheet $\square y' = \lim_{z \rightarrow x} \frac{z^{\frac{1}{3}} - x^{\frac{1}{3}}}{z - x} = :: 4$

Ans

 $\square \frac{1}{3}x^{-\frac{2}{3}}$

Q070403

次の関数を微分せよ

[1] $y = x^{\frac{1}{4}}$

[2] $y = x^{-2}$

[3] $y = x^{-\frac{1}{2}}$

Sheet [1] $y' = :: 2$ [2] $y' = :: 2$ [3] $y' = :: 2$

Ans

[1] $y' = \frac{1}{4}x^{-\frac{3}{4}}$

[2] $y' = -2x^{-3}$

[3] $y' = -\frac{1}{2}x^{-\frac{3}{2}}$

Q070404

 $y = \sin x, y = \cos x, y = -\sin x, y = -\cos x$ のどれかを答えよ[1] $y =$ [2] $y =$ [3] $y =$ [4] $y =$ Sheet [1] $y = :: 2$ [2] $y = :: 2$ [3] $y = :: 2$ [4] $y = :: 2$

Ans

[1] $y =$ [2] $y =$ [3] $y =$ [4] $y =$

Q070405

$y = \sin x, y = \cos x$ の導関数を答えよ

[1] $y = \sin x$

[2] $y = \cos x$

Sheet [1] $y' = \cos x$ [2] $y' = -\sin x$

Ans

[1] $y = \cos x$

[2] $y = -\sin x$

Q070406

次の問いに答えよ

[1] $y = \sin x$ の $(0, 0)$ における接線の傾きを求めよ[2] $y = 2 \sin x - 3 \cos x$ を微分せよ

Sheet [1] = :: 2 [2] = :: 2

Ans

[1] 1

[2] $y' = 2 \cos x + 3 \sin x$

Q070407

微分せよ

$$[1] \ y = \sin x \cos x$$

$$[2] \ y = \sin^2 x = \sin x \sin x$$

$$[3] \ y = x \tan x$$

$$[4] \ y = \tan x - x$$

Sheet [1] $y' = :: 2$ [2] $y' = :: 2$ [3] $y' = :: 2$ [4] $y' = :: 2$

Ans

$$[1] \ y' = \cos^2 x - \sin^2 x$$

$$[2] \ y' = 2 \sin x \cos x$$

$$[3] \ y' = \tan x + \frac{x}{\cos^2 x}$$

$$[4] \ y' = \frac{1}{\cos^2 x} - 1 = \frac{\sin^2 x}{\cos^2 x}$$

Q070408

微分せよ

$$[1] \ y = \sin 3x$$

$$[2] \ y = (5x + 1)^3$$

$$[3] \ y = \sqrt{2x + 3}$$

$$[4] \ y = \tan(-x + 1)$$

Sheet [1] $y' = \sin 3x$ [2] $y' = 15(5x + 1)^2$ [3] $y' = \frac{1}{\sqrt{2x + 3}}$ [4] $y' = -\frac{1}{\cos^2(-x + 1)}$

Ans

$$[1] \ y' = 3 \cos 3x$$

$$[2] \ y' = 15(5x + 1)^2$$

$$[3] \ y' = \frac{1}{\sqrt{2x + 3}}$$

$$[4] \ y' = -\frac{1}{\cos^2(-x + 1)}$$