

$$\boxed{1} \quad (\sin x)' = \cos x$$

$$(\cos x)' = -\sin x$$

$$(\tan x)' = \frac{1}{\cos^2 x} \quad \text{となることを示せ。}$$

2 次関数を微分せよ。

(1)  $y = \sin x + \cos x$

(3)  $y = \cos 3x$

(5)  $y = \tan 4x$

(7)  $y = \tan x^3$

(9)  $y = \tan^4 x$

(11)  $y = \sin x \cos^2 x$

(2)  $y = \tan x + x$

(4)  $y = \sin\left(2x + \frac{\pi}{3}\right)$

(6)  $y = \cos x^2$

(8)  $y = \sin^3 x$

(10)  $y = x^2 \sin 3x^2$

(12)  $y = \frac{x^2}{\cos x}$

3 次関数を微分せよ。

$$y = \cos^2 4x$$

4 次関数を微分せよ。

$$(1) y = \sin^2\left(2x + \frac{\pi}{6}\right)$$

$$(3) y = \sin^4 x \cos 4x$$

$$(5) y = \frac{\cos x}{1 - \sin x}$$

$$(2) y = \sin \sqrt{x^2 - x + 1}$$

$$(4) y = \sqrt{1 + \cos^2 x}$$

$$(6) y = \left(\tan x + \frac{1}{\tan x}\right)^2$$