

### 6-3 合成関数の微分

1 次の関数を微分せよ。

(1)  $y = (3x^2 - x + 1)^3$

(2)  $y = \frac{1}{(2x+1)^2}$

(3)  $y = \left(2 + \frac{1}{x}\right)^4$

2 次の関数を微分せよ。

(1)  $y = x^{\frac{2}{5}}$

(2)  $y = \sqrt[6]{x^5}$

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

(4)  $y = \frac{1}{\sqrt{3x+1}}$

3 次の関数を微分せよ。

(1)  $y = \frac{x^2 - 3x + 2}{2x - 3}$

(2)  $y = \frac{3}{(2x^2 - 1)^3}$

(3)  $y = \sqrt[3]{x^2 + 4x + 5}$

## 6-3 合成関数の微分

[4] 次の関数を微分せよ。

(1)  $y = \frac{x^3}{(5x+1)^2}$

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

[5] 次の関数を微分せよ。

(1)  $y = (x-1)^2$

(2)  $y = (3x-1)^3$

(3)  $y = (2x-1)(x-2)^2$

(4)  $y = (x^2+2x+3)^2$

(5)  $y = \frac{1}{(2x^3+3)^2}$

(6)  $y = \left(x + \frac{1}{x}\right)^3$

[6] 次の関数を微分せよ。

(1)  $y = (x^2+3x-5)^2$

(2)  $y = \frac{1}{(x^2+x+1)^2}$

(3)  $y = (x^2-3)^2(x+1)$

(4)  $y = \sqrt[5]{x^3}$

(5)  $y = \sqrt{9-x^2}$

(6)  $y = \sqrt{\frac{x-1}{x+1}}$