

小テスト解答

No.1 方程式・式と証明 整式の乗法と因数分解(1)

1.

$$\begin{aligned}(1) \quad (x-5)^3 &= x^3 - 3 \cdot x^2 \cdot 5 + 3 \cdot x \cdot 5^2 - 5^3 \\ &= x^3 - 15x^2 + 75x - 125\end{aligned}$$

(3 点)

$$\begin{aligned}(2) \quad (x+2y)^3 &= x^3 + 3 \cdot x^2 \cdot 2y + 3 \cdot x \cdot (2y)^2 + (2y)^3 \\ &= x^3 + 6x^2y + 12xy^2 + 8y^3\end{aligned}$$

(3 点)

$$\begin{aligned}(3) \quad (2a+3b)^3 &= (2a)^3 + 3 \cdot (2a)^2 \cdot 3b + 3 \cdot 2a \cdot (3b)^2 + (3b)^3 \\ &= 8a^3 + 36a^2b + 54ab^2 + 27b^3\end{aligned}$$

(3 点)

2.

$$\begin{aligned}(1) \quad (3x+1)(9x^2-3x+1) &= (3x+1)\{(3x)^2-3x \cdot 1+1^2\} \\ &= (3x)^3+1^3 \\ &= 27x^3+1\end{aligned}$$

(3 点)

$$\begin{aligned}(2) \quad (7x-4)(49x^2+28x+16) &= (7x-4)\{(7x)^2+7x \cdot 4+4^2\} \\ &= (7x)^3-4^3 \\ &= 343x^3-64\end{aligned}$$

(4 点)

$$\begin{aligned}(3) \quad (5x-3y)(25x^2+15xy+9y^2) &= (5x-3y)\{(5x)^2+5x \cdot 3y+(3y)^2\} \\ &= (5x)^3-(3y)^3 \\ &= 125x^3-27y^3\end{aligned}$$

(4 点)