

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) $(x+2)^3 = x^3 + 3 \cdot x^2 \cdot 2 + 3 \cdot x \cdot 2^2 + 2^3$
 $= x^3 + 6x^2 + 12x + 8$

(3 点)

(2) $(5x-3y)^3 = (5x)^3 - 3 \cdot (5x)^2 \cdot 3y + 3 \cdot 5x \cdot (3y)^2 - (3y)^3$
 $= 125x^3 - 225x^2y + 135xy^2 - 27y^3$

(3 点)

(3) $(2x+y)(4x^2-2xy+y^2) = (2x+y)\{(2x)^2-2x \cdot y+y^2\}$
 $= (2x)^3 + y^3$
 $= 8x^3 + y^3$

(3 点)

2. (1) $x^3+27 = x^3+3^3$
 $= (x+3)(x^2-3x+9)$

(3 点)

(2) $8x^3-125y^3 = (2x)^3-(5y)^3$
 $= (2x-5y)(4x^2+10xy+25y^2)$

(4 点)

(3) $64x^6-1 = (8x^3)^2-1^2$
 $= (8x^3+1)(8x^3-1)$
 $= \{(2x)^3+1^3\}\{(2x)^3-1^3\}$
 $= (2x+1)(4x^2-2x+1)(2x-1)(4x^2+2x+1)$
 $= (2x+1)(2x-1)(4x^2+2x+1)(4x^2-2x+1)$

(4 点)