

89

公式による因数分解

年 組 番 名前

● 例 是 頁 ●

次の式を因数分解しなさい。 → 86へ

$$\begin{aligned}
 (1) \quad & a x^2 + 4 a x + 3 a \quad \left. \begin{array}{l} \text{共通な因数をくり出す} \\ \text{かっこの中を因数分解する} \end{array} \right\} \\
 & = a(x^2 + 4x + 3) \\
 & = a(x+1)(x+3)
 \end{aligned}$$

問1 次の式を因数分解しなさい。

$$\begin{aligned}
 (1) \quad & a x^2 + 5 a x + 4 a \\
 & = a(x^2 + 5x + 4) \\
 & = a(x+1)(x+4)
 \end{aligned}$$

aでくくってから因数分解すればいいんだよね

答. a(x+1)(x+4)

$$\begin{aligned}
 (2) \quad & a x^2 - 5 a x + 6 a \\
 & = a(x^2 - 5x + 6) \\
 & = a(x-2)(x-3)
 \end{aligned}$$

答. a(x-2)(x-3)

$$\begin{aligned}
 (3) \quad & x^2 y - 6 x y + 9 y \\
 & = y(x^2 - 6x + 9) \\
 & = y(x-3)^2
 \end{aligned}$$

答. y(x-3)²

$$\begin{aligned}
 (4) \quad & x^2 y - 4 y \\
 & = y(x^2 - 4) \\
 & = y(x+2)(x-2)
 \end{aligned}$$

答. y(x+2)(x-2)

$$\begin{aligned}
 (5) \quad & 2 x^2 + 4 x - 16 \\
 & = 2(x^2 + 2x - 8) \\
 & = 2(x+4)(x-2)
 \end{aligned}$$

2でくくってから因数分解すればいいんだよね

答. 2(x+4)(x-2)

$$\begin{aligned}
 (6) \quad & 3 x^2 + 24 x + 36 \\
 & = 3(x^2 + 8x + 12) \\
 & = 3(x+2)(x+6)
 \end{aligned}$$

答. 3(x+2)(x+6)

$$\begin{aligned}
 (7) \quad & 4 x^2 - 36 \\
 & = 4(x^2 - 9) \\
 & = 4(x+3)(x-3)
 \end{aligned}$$

答. 4(x+3)(x-3)

$$\begin{aligned}
 (8) \quad & 5 x^2 - 20 x + 20 \\
 & = 5(x^2 - 4x + 4) \\
 & = 5(x-2)^2
 \end{aligned}$$

答. 5(x-2)²

$$\begin{aligned}
 (9) \quad & -3 x^2 + 18 x - 27 \\
 & = -3(x^2 - 6x + 9) \\
 & = -3(x-3)^2
 \end{aligned}$$

-3でくくってから因数分解すればいいんだよね

答. -3(x-3)²

$$\begin{aligned}
 (10) \quad & -x^2 - 2x + 8 \\
 & = -(x^2 + 2x - 8) \\
 & = -(x+4)(x-2)
 \end{aligned}$$

答. -(x+4)(x-2)

$$\begin{aligned}
 (11) \quad & 2 x^2 y - 8 x y + 6 y \\
 & = 2 y(x^2 - 4x + 3) \\
 & = 2 y(x-1)(x-3)
 \end{aligned}$$

2yでくくってから因数分解すればいいんだよね

答. 2y(x-1)(x-3)

$$\begin{aligned}
 (12) \quad & 2 x^2 y - 6 x y - 108 y \\
 & = 2 y(x^2 - 3x - 54) \\
 & = 2 y(x-9)(x+6)
 \end{aligned}$$

答. 2y(x-9)(x+6)

$$\begin{aligned}
 (13) \quad & 4 x^3 - 32 x^2 + 64 x \\
 & = 4 x(x^2 - 8x + 16) \\
 & = 4 x(x-4)^2
 \end{aligned}$$

4xでくくってから因数分解すればいいんだよね

答. 4x(x-4)²

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

答. 3x(x+1)(x-1)

$$\begin{aligned}
 (15) \quad & 5 x^2 y + 30 x y^2 + 45 y^3 \\
 & = 5 y(x^2 + 6x y + 9 y^2) \\
 & = 5 y(x+3 y)^2
 \end{aligned}$$

答. 5y(x+3y)²