

因数分解 $x^2 \pm 2ax + a^2 = (x \pm a)^2$ の利用

例題 次の式を因数分解せよ。

(1) $x^2 + 8x + 16$

(2) $x^2 - 10x + 25$

(3) $4x^2 - 12xy + 9y^2$

答

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練習 次の式を因数分解せよ。

(1) $x^2 - 10x + 25$

答

(2) $a^2 - 6a + 9$

答

(3) $x^2 - 8x + 16$

答

(4) $25x^2 - 20xy + 4y^2$

答

(5) $x^2 + \frac{2}{3}x + \frac{1}{9}$

答

(6) $x^2 - 0.4x + 0.04$

答

因数分解 $x^2 \pm 2ax + a^2 = (x \pm a)^2$ の利用

例題 次の式を因数分解せよ。

(1) $x^2 + 8x + 16$

★

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

答 $(x + 4)^2$

(2) $x^2 - 10x + 25$

★

$$\begin{aligned} x^2 - 10x + 25 \\ = (x - 5)^2 \end{aligned}$$

答 $(x - 5)^2$

(3) $4x^2 - 12xy + 9y^2$

★

$$\begin{aligned} 4x^2 - 12xy + 9y^2 \\ = (2x - 3y)^2 \end{aligned}$$

答 $(2x - 3y)^2$

練習 次の式を因数分解せよ。

(1) $x^2 - 10x + 25$

★

$$\begin{aligned} x^2 - 10x + 25 \\ = (x - 5)^2 \end{aligned}$$

答 $(x - 5)^2$

(2) $a^2 - 6a + 9$

★

$$\begin{aligned} a^2 - 6a + 9 \\ = (a - 3)^2 \end{aligned}$$

答 $(a - 3)^2$

(3) $x^2 - 8x + 16$

★

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

答 $(x - 4)^2$

(4) $25x^2 - 20xy + 4y^2$

★

$$\begin{aligned} 25x^2 - 20xy + 4y^2 \\ = (5x - 2y)^2 \end{aligned}$$

答 $(5x - 2y)^2$

(5) $x^2 + \frac{2}{3}x + \frac{1}{9}$

★

$$\begin{aligned} x^2 + \frac{2}{3}x + \frac{1}{9} \\ = \left(x + \frac{1}{3}\right)^2 \end{aligned}$$

答 $\left(x + \frac{1}{3}\right)^2$

(6) $x^2 - 0.4x + 0.04$

注意

$$0.2 \times 0.2 = 0.04$$

答 $(x - 0.2)^2$