

練習 次の式を因数分解せよ。

(1) $2x^3y - 6x^2y - 8xy$

答

(2) $y - x^2y$

答

(3) $2x^2y - 8xy + 6y$

答

(4) $-ax^2 + 3ax + 18a$

答

(5) $-3ax^2 - 12a + 12ax$

答

(6) $-3ax^2 - 6ax + 9a$

答

(7) $-3ax^2 - 6ax + 9a$

答

(8) $36m^2 - 9n^2$

答

練習 次の式を因数分解せよ。

(1) $3ab^2 - 27ac^2$

答

(2) $36a^2x + 96abx + 64b^2x$

答

(3) $x^3y + x^2y^2 - 2xy^3$

答

(4) $x^3y^3 - xy$

答

(5) $4a^3b - 16ab^3$

答

(6) $2a^3b + 4a^2b^2 + 2ab^3$

答

(7) $2x^3y - 6x^2y^2 - 56xy^3$

答

(8) $3ab^2 - \frac{1}{3}a^3$

答

解答 **練習** 次の式を因数分解せよ。

(1) $2x^3y - 6x^2y - 8xy$

★

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

答 $2xy(x-4)(x+1)$

(2) $y - x^2y$

★

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

答 $y(x+1)(-x+1)$

(3) $2x^2y - 8xy + 6y$

★

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

答 $2y(x-1)(x-3)$

(4) $-ax^2 + 3ax + 18a$

★

$$\begin{aligned} &-ax^2 + 3ax + 18a \\ &= -a(x^2 - 3x - 18) \\ &= -a(x+3)(x-6) \end{aligned}$$

答 $-a(x+3)(x-6)$

(5) $-3ax^2 - 12a + 12ax$

★

$$\begin{aligned} &-3ax^2 - 12a + 12ax \\ &= -3a(x^2 - 4x + 4) \\ &= -3a(x-2)^2 \end{aligned}$$

答 $-3a(x-2)^2$

(6) $-3ax^2 - 6ax + 9a$

★

$$\begin{aligned} &-3ax^2 - 6ax + 9a \\ &= -3a(x^2 + 2x - 3) \\ &= -3a(x+3)(x-1) \end{aligned}$$

答 $-3a(x+3)(x-1)$

(7) $-3ax^2 - 6ax + 9a$

★

$$\begin{aligned} &-3ax^2 - 6ax + 9a \\ &= -3a(x^2 + 2x - 3) \\ &= -3a(x+3)(x-1) \end{aligned}$$

答 $-3a(x+3)(x-1)$

(8) $36m^2 - 9n^2$

★

$$\begin{aligned} &36m^2 - 9n^2 \\ &= 9(4m^2 - n^2) \\ &= 9(2m+n)(2m-n) \end{aligned}$$

答 $9(2m+n)(2m-n)$

解答 **練習** 次の式を因数分解せよ。

(1) $3ab^2 - 27ac^2$

★

$$\begin{aligned} & 3ab^2 - 27ac^2 \\ &= 3a(b^2 - 9c^2) \\ &= 3a(b+3c)(b-3c) \end{aligned}$$

答 $3a(b+3c)(b-3c)$

(2) $36a^2x + 96abx + 64b^2x$

★

$$\begin{aligned} & 36a^2x + 96abx + 64b^2x \\ &= 4x(9a^2 + 24ab + 16b^2) \\ &= 4x(3a+4b)^2 \end{aligned}$$

答 $4x(3a+4b)^2$

(3) $x^3y + x^2y^2 - 2xy^3$

★

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

答 $xy(x+2y)(x-y)$

(4) $x^3y^3 - xy$

★

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

答 $xy(xy+1)(xy-1)$

(5) $4a^3b - 16ab^3$

★

$$\begin{aligned} & 4a^3b - 16ab^3 \\ &= 4ab(a^2 - 4b^2) \\ &= 4ab(a+2b)(a-2b) \end{aligned}$$

答 $4ab(a+2b)(a-2b)$

(6) $2a^3b + 4a^2b^2 + 2ab^3$

★

$$\begin{aligned} & 2a^3b + 4a^2b^2 + 2ab^3 \\ &= 2ab(a^2 + 2ab + b^2) \\ &= 2ab(a+b)^2 \end{aligned}$$

答 $2ab(a+b)^2$

(7) $2x^3y - 6x^2y^2 - 56xy^3$

★

$$\begin{aligned} & 2x^3y - 6x^2y^2 - 56xy^3 \\ &= 2xy(x^2 - 3xy - 28y^2) \\ &= 2xy(x+4y)(x-7y) \end{aligned}$$

答 $2xy(x+4y)(x-7y)$

(8) $3ab^2 - \frac{1}{3}a^3$

★

$$\begin{aligned} & 3ab^2 - \frac{1}{3}a^3 \\ &= 3a\left(b^2 - \frac{1}{9}a^2\right) \\ &= 3a\left(b + \frac{1}{3}a\right)\left(b - \frac{1}{3}a\right) \end{aligned}$$

答 $3a\left(b + \frac{1}{3}a\right)\left(b - \frac{1}{3}a\right)$