

展開と因数分解 [乗法公式を利用した因数分解(1)]

<演習問題>

次の式を因数分解せよ。

(1) $x^2 + 6x + 5$

(2) $x^2 - x - 2$

(3) $x^2 - 3x - 10$

(4) $x^2 - 7x + 6$

(5) $x^2 + 5x + 6$

(6) $x^2 - x - 6$

(7) $x^2 + 5x + 4$

(8) $x^2 - 3x - 4$

(9) $x^2 - 2x - 8$

(10) $x^2 + 11x + 10$

(11) $x^2 - 6x - 7$

(12) $x^2 + 17x + 72$

(13) $x^2 + x - 110$

(14) $x^2 + 7x + 10$

(15) $x^2 - 2x - 24$

(16) $x^2 + 11x + 24$

(17) $x^2 - 10x - 24$

(18) $x^2 - 23x - 24$

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次の式を因数分解せよ。

(1) $x^2 + 6x + 5$

$$\begin{aligned}x^2 + 6x + 5 &= x^2 + (1 + 5)x + 1 \times 5 \\ &= (x + 1)(x + 5)\end{aligned}$$

(2) $x^2 - x - 2$

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

(3) $x^2 - 3x - 10$

$$\begin{aligned}x^2 - 3x - 10 &= x^2 + (2 - 5)x + 2 \times (-5) \\ &= (x + 2)(x - 5)\end{aligned}$$

(4) $x^2 - 7x + 6$

$$\begin{aligned}x^2 - 7x + 6 &= x^2 + (-1 - 6)x + (-1) \times (-6) \\ &= (x - 1)(x - 6)\end{aligned}$$

(5) $x^2 + 5x + 6$

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

(6) $x^2 - x - 6$

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

(7) $x^2 + 5x + 4$

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

(8) $x^2 - 3x - 4$

$$\begin{aligned}x^2 - 3x - 4 &= x^2 + (1 - 4)x + 1 \times (-4) \\ &= (x + 1)(x - 4)\end{aligned}$$

(9) $x^2 - 2x - 8$

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

(10) $x^2 + 11x + 10$

$$\begin{aligned}x^2 + 11x + 10 &= x^2 + (1 + 10)x + 1 \times 10 \\ &= (x + 1)(x + 10)\end{aligned}$$

(11) $x^2 - 6x - 7$

$$\begin{aligned}x^2 - 6x - 7 &= x^2 + (1 - 7)x + 1 \times (-7) \\ &= (x + 1)(x - 7)\end{aligned}$$

(12) $x^2 + 17x + 72$

$$\begin{aligned}x^2 + 17x + 72 &= x^2 + (8 + 9)x + 8 \times 9 \\ &= (x + 8)(x + 9)\end{aligned}$$

(13) $x^2 + x - 110$

$$\begin{aligned}x^2 + x - 110 &= x^2 + (11 - 10)x + 11 \times (-10) \\ &= (x + 11)(x - 10)\end{aligned}$$

(14) $x^2 + 7x + 10$

$$\begin{aligned}x^2 + 7x + 10 &= x^2 + (2 + 5)x + 2 \times 5 \\ &= (x + 2)(x + 5)\end{aligned}$$

(15) $x^2 - 2x - 24$

$$\begin{aligned}x^2 - 2x - 24 &= x^2 + (-6 + 4)x + (-6) \times 4 \\ &= (x - 6)(x + 4)\end{aligned}$$

(16) $x^2 + 11x + 24$

$$\begin{aligned}x^2 + 11x + 24 &= x^2 + (3 + 8)x + 3 \times 8 \\ &= (x + 3)(x + 8)\end{aligned}$$

(17) $x^2 - 10x - 24$

$$\begin{aligned}x^2 - 10x - 24 &= x^2 + (2 - 12)x + 2 \times (-12) \\ &= (x + 2)(x - 12)\end{aligned}$$

(18) $x^2 - 23x - 24$

$$\begin{aligned}x^2 - 23x - 24 &= x^2 + (1 - 24)x + 1 \times (-24) \\ &= (x + 1)(x - 24)\end{aligned}$$