因数分解②　解答と解説

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1 解答　(1) $(x+1)(x+2)$ 　　(2) $(x-1)(x-5)$ 　　(3) $(x+3)(x-2)$ 　　(4) $(x+2)(x-4)$

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

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

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

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

2 解答　(1) $(x+1)(x-5)$ 　　(2) $(x+7)(x-1)$ 　　(3) $(x+4)(x-2)$ 　　(4) $(x+3)(x-5)$
　　　　　(5) $(y+7)(y-2)$ 　　(6) $(a+3)(a-10)$

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

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

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

(4) $\begin{aligned} x^2-2x-15 &= x^2+\{3+(-5)\}x+3\times(-5) \\ &= (x+3)(x-5) \end{aligned}$

(5) $\begin{aligned} y^2+5y-14 &= y^2+\{7+(-2)\}y+7\times(-2) \\ &= (y+7)(y-2) \end{aligned}$

(6) $\begin{aligned} a^2-7a-30 &= a^2+\{3+(-10)\}a+3\times(-10) \\ &= (a+3)(a-10) \end{aligned}$

3 解答　(1) $(x+2)(x+4)$ 　　(2) $(x-3)(x-4)$ 　　(3) $(x+3)(x+9)$ 　　(4) $(x-4)(x-6)$

(1) $\begin{aligned} x^2+6x+8 &= x^2+(2+4)x+2\times 4 \\ &= (x+2)(x+4) \end{aligned}$

(2) $\begin{aligned} x^2-7x+12 &= x^2+\{(-3)+(-4)\}x+(-3)\times(-4) \\ &= (x-3)(x-4) \end{aligned}$

(3) $\begin{aligned} x^2+12x+27 &= x^2+(3+9)x+3\times 9 \\ &= (x+3)(x+9) \end{aligned}$

(4) $\begin{aligned} x^2-10x+24 &= x^2+\{(-4)+(-6)\}x+(-4)\times(-6) \\ &= (x-4)(x-6) \end{aligned}$