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問1 $x^2 + 7x + 12 = (x+4)(x+3)$
和 積 $\rightarrow$ 因数分解

(例) $x^2 + 5x + 6$ を因数分解しよう
和が5, 積が6 $\rightarrow +2$ と $+3$

$= (x+2)(x+3)$ ★ $(x+3)(x+2)$ ともOK.

(例) $x^2 - 7x + 10 = (x-5)(x-2)$
和が-7 } -5と-2
積が10

P25 (例) $x^2 + x - 6 \rightarrow$ 和が1, 積が-6
 $= (x-2)(x+3)$

(例) $x^2 - 2x - 15 = (x-5)(x+3)$

問2 (1) $x^2 - 2x - 8 = (x-4)(x+2)$ (2) $x^2 + 3x - 10 = (x+5)(x-2)$

(3) $a^2 - 7a - 8 = (a-8)(a+1)$ (4) $x^2 + x - 2 = (x+2)(x-1)$

問3 (1) $x^2 + 10x + 9 = (x+9)(x+1)$ (2) $y^2 + 5y - 36 = (y+9)(y-4)$

★ 公式① $x^2 + (a+b)x + ab = (x+a)(x+b)$
和 積

(注) -2 と $-3 \rightarrow$ 積は6, 和は-5
★ 符号もよく見て考える!

問1 (1) $x^2 + 7x + 6 = (x+6)(x+1)$ (2) $x^2 - 11x + 28 = (x-4)(x-7)$

(3) $x^2 - 8x + 12 = (x-6)(x-2)$ (4) $x^2 - 9x + 8 = (x-8)(x-1)$

★ 和と積はどちらから找けるのがいいか?
 $\Rightarrow$ 積の方が組み合わせが少ない

積が-6	和が1
1, -6	-5 X
-1, 6	5 X
2, -3	-1 X
-2, 3	1 O

(3) $x^2 - 3x - 28 = (x-7)(x+4)$ (4) $x^2 - 16x + 28 = (x-14)(x-2)$

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(例) ① $x^2 + 6x + 9 = (x+3)(x+3)$
和が6, 積が9 $= (x+3)^2$

② $x^2 - 10x + 25 = (x-5)^2$
 $5^2 = 25$

(例) $x^2 + 12x + 36 = (x+6)^2$

問4 (1) $x^2 + 4x + 4 = (x+2)^2$ (2) $a^2 + 18a + 81 = (a+9)^2$

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(例) $x^2 - 25 = (x+5)(x-5)$
 5^2

(例) $x^2 - 36 = (x+6)(x-6)$

問5 (1) $a^2 - 4 = (a+2)(a-2)$ (2) $x^2 - 1 = (x+1)(x-1)$

(3) $x^2 - 100 = (x+10)(x-10)$ (4) $16 - y^2 = (4+y)(4-y)$

★ 公式② $x^2 + 2ax + a^2 = (x+a)^2$

$\Rightarrow x^2 + 6x + 9 = x^2 + 2 \times 3 \times x + 3^2 = (x+3)^2$

★ 公式③ $x^2 - 2ax + a^2 = (x-a)^2$

(3) $x^2 - 2x + 1 = (x-1)^2$ (4) $y^2 - 14y + 49 = (y-7)^2$

★ 公式④ $x^2 - a^2 = (x+a)(x-a)$

問7 (1) $x^2 - 3x + 2 = (x-2)(x-1)$ (2) $x^2 - 64 = (x+8)(x-8)$

(3) $y^2 - 4y + 4 = (y-2)^2$ (4) $x^2 - 5x - 24 = (x-8)(x+3)$

(5) $x^2 + 13x + 36 = (x+4)(x+9)$ (6) $a^2 + 22a + 121 = (a+11)^2$