

P.5

15

$$(1) a^2 + 2a + 1 - x^2$$

$$= (\frac{a+1}{1})^2 - x^2$$

$$= (\frac{a+1+x}{1}) (\frac{a+1-x}{1})$$

$$= (a+x+1)(a-x+1)$$

模範解答仕様

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

$$= 9x^2 - (y^2 - 4y + 4)$$

$$= (3x)^2 - (y-2)^2$$

$$= (3x + y - 2) \{ 3x - (y-2) \}$$

$$= (3x + y - 2)(3x - y + 2)$$

$$(2) 4a^2 - 4ab + b^2 - 9c^2$$

$$= (2a-b)^2 - (3c)^2$$

$$= (2a-b+3c)(2a-b-3c)$$

$$(4) \frac{x^2+4x+4}{1} - \frac{2xy+4y}{1}$$

$$= \frac{(x+2)^2}{1} - 2y \frac{(x+2)}{1}$$

$$= \frac{(x+2)}{1} (x+2-2y)$$

P. 6 117

$$(1) \underline{x^2y - x - y + 1}$$

$$= x(\underline{y-1}) - (\underline{y-1})$$

$$= (y-1)(x-1)$$

$$(2) \quad x^2y - y^2z - y^3 + x^2z \quad \left[\begin{array}{l} z=1 \\ \text{降次} \end{array} \right]$$

$$= (x^2 - y^2)z + x^2y - y^3$$

$$= (x^2 - y^2)z + y(x^2 - y^2)$$

$$= (x^2 - y^2)(z + y)$$

$$= (x+y)(x-y)(y+z)$$

$$(3) \quad a(b^2 - c^2) + b(c^2 - a^2) + c(a^2 - b^2)$$

$$= (b^2 - c^2)a + bc^2 - \underline{ba^2} + \underline{ca^2} - b^2c$$

$$= (b+c)a^2 + (b^2 - c^2)a - b^2c + bc^2$$

$$= -(b-c)a^2 + (b+c)(b-c)a - bc(b-c)$$

$$= -(b-c) \{ a^2 - (b+c)a + bc \} \quad \left[\begin{array}{l} 1-b \rightarrow -b \\ 1-c \rightarrow -c \\ -(b+c) \end{array} \right]$$

$$= -(b-c)(a-b)(a-c) \quad \left[\begin{array}{l} \text{合} \\ \text{答} \end{array} \right]$$

$$= (a-b)(b-c)(c-a)$$

$$(4) \quad ab(a-b) + bc(b-c) + ca(c-a)$$

$$= \underline{a^2b} - \underline{ab^2} + b^2c - bc^2 + \underline{c^2a} - \underline{ca^2}$$

$$= (b-c)a^2 - (b^2 - c^2)a + b^2c - bc^2$$

$$= (b-c)a^2 - (b+c)(b-c)a + bc(b-c)$$

$$= (b-c) \{ a^2 - (b+c)a + bc \}$$

$$= (b-c)(a-b)(a-c) \quad \left[\begin{array}{l} 1-b \rightarrow -b \\ 1-c \rightarrow -c \\ -(b+c) \end{array} \right]$$

P. 6 18

$$(1) \frac{(a+b)^2}{A} + 10 \frac{(a+b)}{A} + 25$$

$$= A^2 + 10A + 25$$

$$= (A+5)^2$$

$$= (a+b+5)^2$$

$$(2) 5 \frac{(x+y)^2}{A} - 8 \frac{(x+y)}{A} - 4$$

$$= 5A^2 - 8A - 4$$

$$= (5A+2)(A-2)$$

$$\begin{array}{r} 5x^2 \rightarrow 2 \\ 1x-2 \rightarrow -10 \\ \hline -8 \end{array}$$

$$= \{5(x+y)+2\}(x+y-2)$$

$$= (5x+5y+2)(x+y-2)$$

$$(3) \frac{(x^2+4x)^2}{A} - 8 \frac{(x^2+4x)}{A} - 48$$

$$= A^2 - 8A - 48$$

$$= (A-12)(A+4)$$

$$= (x^2+4x-12)(x^2+4x+4)$$

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

$$(4) 3 \frac{(x^2-3x)^2}{A} - 10 \frac{(x^2-3x)}{A} - 8$$

$$= 3A^2 - 10A - 8$$

$$= (3A+2)(A-4)$$

$$\begin{array}{r} 3x^2 \rightarrow 2 \\ 1x-4 \rightarrow -12 \\ \hline -10 \end{array}$$

$$= \{3(x^2-3x)+2\}(x^2-3x-4)$$

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

P.7 [20]

$$(1) x^4 - 81$$

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

$$= (x^2 + 9)(x^2 - 9)$$

$$= (x^2 + 9)(x+3)(x-3)$$

$$(2) x^4 - 8x^2 + 16$$

$$= (x^2 - 4)^2$$

$$= \{(x+2)(x-2)\}^2$$

$$= (x+2)^2(x-2)^2$$

$$(3) x^4 - 10x^2 + 9$$

$$= (x^2 - 1)(x^2 - 9)$$

$$= (x+1)(x-1)(x+3)(x-3)$$

$$(4) x^4 - 29x^2 + 100$$

$$= (x^2 - 4)(x^2 - 25)$$

$$= (x+2)(x-2)(x+5)(x-5)$$

$$(5) 3x^4 - x^2 - 2$$

$$= (3x^2 + 2)(x^2 - 1)$$

$$= (3x^2 + 2)(x+1)(x-1)$$

$$\begin{array}{r} 3x^2 - 2 \rightarrow 2 \\ 1x - 1 \rightarrow -3 \\ \hline -1 \end{array}$$

$$(6) 4x^4 - 25x^2 + 36$$

$$= (4x^2 - 9)(x^2 - 4)$$

$$= (2x+3)(2x-3)(x+2)(x-2)$$

$$\begin{array}{r} 4x^2 - 9 \rightarrow -9 \\ 1x - 4 \rightarrow -16 \\ \hline -25 \end{array}$$