

》 1 《 多項式の計算

p3

練習1

$$\begin{array}{lll} 12x^2 - 8xy & - 3a^2 - 15ab & 8x^2y - 2xy^2 \\ 20a^2b^2 + 12ab & - 2x^2y + 3x^2y^2 & 3ab^2 + 4ab \end{array}$$

練習2

$$\begin{array}{lll} 4y - 3 & - 4a + 3 & \frac{5}{6} + \frac{y}{2} \\ - \frac{3}{2b} - \frac{3}{4a} & 6xy - 9y & - \frac{5}{b} + \frac{20a}{3} \end{array}$$

練習3

$$\begin{array}{ll} 12x^2 - 17xy & 8x^2 - 12xy + 15y^2 \\ 2xy + 3y^2 & - 2x^2 + 14xy - 10y^2 \end{array}$$

p4

練習4

$$\begin{array}{ll} 2ab + 5a - 8b - 20 & 6ab - 21a - 8b + 28 \\ 6x^2 + 9bx - 10ax - 15ab & 2ax + 8bx + 6ay + 24by \\ 2x^2 - 4x - 30 & 9a^2 - 6a - 8 \\ x^2 - 16 & 2a^2 - ab - 15b^2 \end{array}$$

p5

$$\begin{array}{ll} 12x^2 + 7xy - 10y^2 & 9a^2 - 25b^2 \\ 2a^2 + a^2 - 5a - 4 & a^2 + 8 \\ ax^2 + 3ax - a - 2x^2 - 6x + 2 & \\ ax + ay + 4a - bx - by - 4b - 5x - 5y - 20 & \\ x^2 + xy - x - 6y^2 - 23y - 20 & \\ a^2 + 8ab - 3a + 16b^2 - 12b - 10 & \\ x^2 - 2xy + y^2 - 64 & \end{array}$$

p6

確認問題 1-1-A 点

$$\begin{array}{lll} 1 & 6x^2 - 15xy & - 8ab^2 - 12b^2 & 3x^2y - \frac{3}{2}xy^2 \\ 2 & - 2a + 3 & \frac{1}{2} + \frac{5y}{4} & 4y - \frac{16}{3} \\ 3 & 17x^2 - 2xy & 8a^2 - 16ab - 5b^2 & \\ 4 & 3xy + 4x - 6y - 8 & a^2 + 3ay - 2ax - 6xy & \\ & 2x^2 - 13x + 15 & a^2 + 7ab + 12b^2 & \\ & a^2 + 27 & x^2 - 3x^2y + 5xy^2 - 3y^2 & \\ & 6x^2 + xy - 28x - 2y^2 - 7y + 30 & & \end{array}$$

p7

確認問題 1-1-B 点

$$\begin{array}{lll} 1 & 15a^2 - 10ab & - 6x^2y + 2x^2 & 6x^2y + 8xy^2 \\ 2 & - 4b - 3 & y - \frac{x}{2} & \frac{2a}{3} + 4b \\ 3 & - 5ax + 11ay & - 3x^2 + 7xy - 12y^2 & \\ 4 & 2xy - 16x - 5y + 40 & 12xy - 15bx - 4ay + 5ab & \\ & 12a^2 - 11a - 15 & 4x^2 - 9y^2 & \\ & a^2 - ab - ab^2 + b^2 & x^2 - 1 & \\ & 5a^2 - 19ab + 4a - 4b^2 + 26b - 12 & & \end{array}$$

》 2 《 乗法公式

p9

練習1

$$\begin{array}{lll} x^2 + 7x + 10 & x^2 + x - 12 & x^2 - 7x + 6 \\ x^2 - 3x - 54 & x^2 - 7x - 8 & x^2 - 11x + 28 \\ x^2 + 5x - 6 & x^2 + 9x + 20 & x^2 - 9x + 14 \\ x^2 - 6xy - 7y^2 & x^2 - 4xy - 21y^2 & x^2 + 6xy + 8y^2 \\ x^2 - 11xy + 30y^2 & x^2 + 12xy + 32y^2 & x^2 + 2xy - 15y^2 \\ x^2 + 4xy - 45y^2 & x^2 - 12xy + 27y^2 & x^2 + 2xy - 3y^2 \end{array}$$

練習2

$$\begin{array}{lll} 4x^2 + 4x - 15 & 16x^2 - 32x + 12 & 9x^2 - 12x - 32 \\ 25x^2 + 15x - 4 & 16x^2 - 8x - 63 & 4x^2 + 22x + 30 \\ 9x^2 + 6x - 15 & 25x^2 + 35x + 10 & 4x^2 - 26x + 40 \\ 36x^2 + 48xy + 7y^2 & 9x^2 + 6xy - 8y^2 & 16x^2 + 8xy - 3y^2 \\ 4x^2 - 22xy + 24y^2 & 9x^2 + 15xy - 14y^2 & 64x^2 - 80xy + 9y^2 \\ 49x^2 - 7xy - 30y^2 & 16x^2 - 4xy - 30y^2 & 81x^2 - 108xy + 32y^2 \end{array}$$

p11

練習3

$$\begin{array}{lll} x^2 + 4x + 4 & x^2 - 10x + 25 & x^2 + 2x + 1 \\ x^2 - 6x + 9 & x^2 + 8x + 16 & x^2 - 16x + 64 \\ x^2 - 14x + 49 & x^2 + 3x + \frac{9}{4} & x^2 - x + \frac{1}{4} \\ x^2 + 6xy + 9y^2 & x^2 - 10xy + 25y^2 & x^2 + 12xy + 36y^2 \\ x^2 + 8xy + 16y^2 & x^2 - 4xy + 4y^2 & x^2 + 18xy + 81y^2 \\ x^2 - 2xy + y^2 & x^2 + xy + \frac{1}{4}y^2 & x^2 - 5xy + \frac{25}{4}y^2 \end{array}$$

練習4

$$\begin{array}{lll} 4x^2 - 12x + 9 & 16x^2 - 16x + 4 & 9x^2 + 24x + 16 \\ 25x^2 - 10x + 1 & 16x^2 + 56x + 49 & 4x^2 + 20x + 25 \\ 9x^2 - 30x + 25 & 4x^2 + 12x + 9 & 16x^2 + 8x + 1 \\ 4x^2 + 28xy + 49y^2 & 9x^2 - 12xy + 4y^2 & 16x^2 + 24xy + 9y^2 \\ 25x^2 + 20xy + 4y^2 & 4x^2 - 20xy + 25y^2 & 9x^2 + 30xy + 25y^2 \\ 36x^2 + 36xy + 9y^2 & 16x^2 - 16xy + 4y^2 & 4x^2 + 12xy + 9y^2 \end{array}$$

p13

練習5

$$\begin{array}{lll} x^2 - 4 & x^2 - 25 & x^2 - 1 \\ x^2 - 16 & x^2 - 9 & x^2 - 81 \\ x^2 - 49 & x^2 - \frac{9}{4} & x^2 - \frac{1}{4} \\ x^2 - 9y^2 & x^2 - 25y^2 & x^2 - 36y^2 \\ 9x^2 - 16y^2 & 25x^2 - 4y^2 & 4x^2 - 81y^2 \\ 16x^2 - 9y^2 & 36x^2 - \frac{1}{9}y^2 & 64x^2 - \frac{9}{16}y^2 \end{array}$$

練習6

$$\begin{array}{lll} x^2 - 6x + 9 & x^2 + 6x - 16 & x^2 - 16 \\ 5x^2 + 9x - 2 & x^2 + 14x + 49 & x^2 + 15x + 50 \\ x^2 - 25 & 2x^2 - 3x - 9 & 16x^2 + 8x + 1 \\ 4x^2 - 24x + 35 & 25x^2 - y^2 & 9x^2 + 6xy + y^2 \\ 8x^2 + 6x - 2 & 4x^2 - 20xy + 25y^2 & 9x^2 - 25y^2 \\ 36x^2 + 48xy + 16y^2 & 16x^2 + 12xy - 10y^2 & 4x^2 + 12xy + 9y^2 \end{array}$$

p14

確認問題 1-2-A

- | | | | |
|----------|-----------------------|----------------------|------------------------|
| 1 | $x^2 - 7x - 30$ | $x^2 - 16x + 63$ | $x^2 - 5xy - 6y^2$ |
| | $9x^2 + 21x + 10$ | $4x^2 - 10x - 36$ | $4x^2 - 16xy + 15y^2$ |
| 2 | $x^2 + 6x + 9$ | $x^2 - 2x + 1$ | $x^2 + 2xy + y^2$ |
| | $x^2 - 8xy + 16y^2$ | $9x^2 + 12x + 4$ | $4x^2 - 20xy + 25y^2$ |
| 3 | $x^2 - 36$ | $x^2 - 1$ | $9x^2 - 4$ |
| | $x^2 - 16y^2$ | $25x^2 - 9$ | $16x^2 - 49y^2$ |
| 4 | $x^2 - 10x + 25$ | $x^2 + 8x - 9$ | $x^2 - 49$ |
| | $2x^2 - 13x + 15$ | $16x^2 - y^2$ | $9x^2 + 6x + 1$ |
| | $16x^2 + 4x - 2$ | $x^2 - 10xy + 25y^2$ | $36x^2 - 25$ |
| | $4x^2 - x - 3$ | $9x^2 + 12xy + 4y^2$ | $x^2 + 13xy + 40y^2$ |
| | $4x^2 - 25$ | $5x^2 - 12x - 9$ | $16x^2 - 40xy + 25y^2$ |
| | $9x^2 + 15xy - 14y^2$ | | |

p15

確認問題 1-2-B

- | | | | |
|----------|------------------------|-----------------------|-----------------------|
| 1 | $x^2 - 10x + 16$ | $x^2 - 4x - 60$ | $x^2 + xy - 6y^2$ |
| | $4x^2 + 16x + 7$ | $16x^2 - 28x + 10$ | $9x^2 - 18xy - 7y^2$ |
| 2 | $x^2 - 12x + 36$ | $x^2 + 10x + 25$ | $x^2 + 6xy + 9y^2$ |
| | $x^2 - 2xy + y^2$ | $4x^2 + 20x + 25$ | $9x^2 - 24xy + 16y^2$ |
| 3 | $x^2 - 9$ | $x^2 - 16$ | $25x^2 - 1$ |
| | $x^2 - 36y^2$ | $9x^2 - 64$ | $4x^2 - 81y^2$ |
| 4 | $x^2 - 14x + 49$ | $x^2 - 5x - 6$ | $x^2 - 81$ |
| | $8x^2 - 6x - 9$ | $9x^2 + 12x + 4$ | $x^2 + 13x + 40$ |
| | $16x^2 - 36$ | $14x^2 - 3x - 2$ | $36x^2 - 12xy + y^2$ |
| | $9x^2 + 18x - 16$ | $4x^2 - 24xy + 36y^2$ | $16x^2 - 81y^2$ |
| | $4x^2 - 20x + 24$ | $x^2 - y^2$ | $9x^2 + 48xy + 64y^2$ |
| | $25x^2 - 50xy + 24y^2$ | | |

3 多項式の計算の利用

p17

練習1

$$\begin{aligned}
 & 5x^2 + 8x - 36 \\
 & - 2x^2 - 4x + 38 \\
 & x^2 + 6x - 28 \\
 & - 9x^2 - 6x + 48 \\
 & 8x^2 - 45xy - 74y^2 \\
 & - 6xy - 38y^2
 \end{aligned}$$

練習2

103^2	98^2	102×98
$= (100 + 3)^2$	$= (100 - 2)^2$	$= (100 + 2)(100 - 2)$
$= 10000 + 600 + 9$	$= 10000 - 400 + 4$	$= 10000 - 4$
$= 10609$	$= 9604$	$= 9996$

p18

確認問題 1-3-A

- | | | | |
|----------|------------------------|-----------------------|------------------------|
| 1 | $- 2x + 54$ | | |
| | $5x^2 - 15x - 116$ | | |
| | $- x^2 - 30x - 93$ | | |
| | $10x^2 + 24x - 98$ | | |
| | $- x^2 - 16xy + 78y^2$ | | |
| 2 | 101^2 | 95^2 | 103×97 |
| | $= (100 + 1)^2$ | $= (100 - 5)^2$ | $= (100 + 3)(100 - 3)$ |
| | $= 10000 + 200 + 1$ | $= 10000 - 1000 + 25$ | $= 10000 - 9$ |
| | $= 10201$ | $= 9025$ | $= 9991$ |

p19

確認問題 1-3-B

- | | | | |
|----------|-----------------------|-----------------------|------------------------|
| 1 | $x^2 - 24x + 98$ | | |
| | $6x^2 - 12x - 88$ | | |
| | $- 2x^2 - 9x + 36$ | | |
| | $- 2x^2 + 16x - 78$ | | |
| | $7x^2 + 8xy - 14y^2$ | | |
| 2 | 105^2 | 94^2 | 107×93 |
| | $= (100 + 5)^2$ | $= (100 - 6)^2$ | $= (100 + 7)(100 - 7)$ |
| | $= 10000 + 1000 + 25$ | $= 10000 - 1200 + 36$ | $= 10000 - 49$ |
| | $= 11025$ | $= 8836$ | $= 9951$ |