

## 1 展開/計算

次の計算をせよ。

(1)  $5x^3(x - 5)$

(2)  $(3x + 5) \times 3x$

(3)  $(3y^2 + 4y + 3) \times 6y^2$

(4)  $\left(\frac{3}{5}x^2 + \frac{1}{5}x - \frac{5}{7}\right) \times \left(-\frac{3}{2}x\right)$

(5)  $\frac{1}{8}x\left(\frac{1}{2}x^2 + \frac{4}{5}x - \frac{1}{2}\right)$

(6)  $(2x^4 + 2x^3 - 14x^2) \div 2x^2$

(7)  $(12a^3 - 2a^2) \div (-2a)$

(8)  $\left(\frac{1}{4}x^4 + x^3 + x^2\right) \div \left(-\frac{3}{7}x\right)$

(9)  $(x^4 + 4x^3 + 4x^2) \div \frac{1}{5}x$

(10)  $(5y^4 + y^3 - y^2) \div \frac{6}{7}y^2$

## 2 展開/計算 2

次の式を展開しなさい。

(1)  $2x(3x - 5)$

(2)  $2x(x + 3)$

(3)  $4x(2x + 5)$

(4)  $(a + b)(c - d)$

(5)  $(x + 1)(y - 1)$

(6)  $(a + b)(2 - c)$

(7)  $(a - c)(b - d)$

(8)  $(1 + a + b)(c - d)$

(9)  $(x + 1)(3x + 7)$

(10)  $(3x + 2)(x + 2)$

(11)  $(3x + 2)(2x - 3)$

(12)  $(3x - 1)(x + 5)$

(13)  $(3x - 1)(x - 6)$

(14)  $(3x + 8)(x + 8)$

(15)  $(2x + 7)(x - 1)$

(16)  $(4x - 3)(x - 6)$

(3)  $(x + 5)(x + 7)$

(4)  $(x + 7)(x + 9)$

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

(6)  $(x + 5)(x + 6)$

(7)  $(x + 8)(x + 9)$

(8)  $(x + 8)(x - 2)$

(9)  $(x - 6)(x + 7)$

(10)  $(x - 7)(x + 4)$

(11)  $(x + 5)(x - 8)$

(12)  $(x + 5)(x + 3)$

(13)  $(x + 7)(x - 2)$

### 3 展開/乗法公式 1

次の式を展開しなさい.

(1)  $(x + 9)(x + 1)$

(2)  $(x + 9)(x + 2)$

(14)  $(x + 7)(x - 8)$

(15)  $(x - 5)(x - 9)$

(16)  $(x - 4)(x - 9)$

(17)  $(x - 3)(x + 5)$

(18)  $(x - 5)(x + 1)$

(19)  $(x - 4)(x + 8)$

(20)  $(x + 8)(x - 3)$

(21)  $(x - 7)(x + 5)$

(22)  $(x - 9)(x - 2)$

(23)  $(x - 8)(x - 4)$

(24)  $(x - 7)(x - 2)$

(25)  $(x - 9)(x - 7)$

(26)  $(x - 5)(x - 7)$

(27)  $(8x + 5)(8x + 3)$

(28)  $(4x + 3)(4x + 1)$

(29)  $(4x + 5)(4x + 3)$

(30)  $(2x + 6)(2x + 7)$

(31)  $(6x + 3)(6x + 4)$

(32)  $(6x + 3)(6x + 7)$

(33)  $(4x + 7)(4x + 9)$

(34)  $(4x + 9)(4x + 8)$

(35)  $(7x + 6)(7x + 2)$

(36)  $(2x + 9)(2x + 5)$

(37)  $(2x + 9)(2x + 7)$

(38)  $(3x - 6)(3x - 9)$

(39)  $(8x - 4)(8x - 9)$

(40)  $(2x - 4)(2x - 7)$

(41)  $(2x - 6)(2x - 3)$

(42)  $(3x - 7)(3x - 1)$

(43)  $(3x - 9)(3x - 2)$

(44)  $(5x - 3)(5x - 4)$

(45)  $(4x - 3y)(4x - 8y)$

(46)  $(8x - 7y)(8x - 2y)$

(47)  $(4x - 3y)(4x - 2y)$

(48)  $(6x - 8y)(6x - 3y)$

(49)  $(4x - 8y)(4x - 6y)$

(50)  $(8x + 3y)(8x - 4y)$

(51)  $(9x + 8y)(9x - 6y)$

(52)  $(3x + 4y)(3x - y)$

(53)  $(6x + y)(6x - 3y)$

(54)  $(3x + 7y)(3x - 4y)$

## 4 展開/乗法公式 2・3

次の式を展開しなさい.

(1)  $(x + 9)^2$

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

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

(4)  $(x + 13)^2$

(5)  $(x - 11)^2$

(6)  $(x - 0.1)^2$

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

(8)  $\left(x - \frac{3}{7}\right)^2$

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

(10)  $(x - 0.7)^2$

(11)  $(3x + 5)^2$

(12)  $(7x + 1)^2$

(13)  $(3x - 4)^2$

(14)  $(2x - 5)^2$

(15)  $(5x + 4)^2$

(16)  $\left(3x - \frac{2}{3}\right)^2$

(17)  $(4x + y)^2$

(18)  $(4x - 3y)^2$

(19)  $(6x - 5y)^2$

(20)  $\left(\frac{3}{4}x - 3y\right)^2$

## 5 展開/乗法公式 4

次の式を展開しなさい.

(1)  $(x - 8)(x + 8)$

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

(3)  $(x + 17)(x - 17)$

(4)  $(x - 2.1)(x + 2.1)$

(5)  $(x + 0.2)(x - 0.2)$

(6)  $(a - 6)(a + 6)$

(7)  $(x - 2)(x + 2)$

(8)  $(x - 3y)(x + 3y)$

(9)  $(x - 9)(x + 9)$

(10)  $(8x - 5)(8x + 5)$

(11)  $(x - 0.3)(x + 0.3)$

(12)  $\left(x - \frac{2}{3}\right)\left(x + \frac{2}{3}\right)$

(13)  $\left(x - \frac{1}{4}\right)\left(x + \frac{1}{4}\right)$

(14)  $(1 + x)(x - 1)$

## 6 展開/計算練習

次の式を計算しなさい.

(1)  $8(x - y)(x + 2y) - (x + 4y)^2$

(2)  $8(x - 6)(x + 2) - 6(x + 4)(x - 3)$

$$(3) 3(a-9)^2 - (a+7)(a+8) - 2(a+4)(a-4)$$

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

$$(4) (3x-8y)(3x+4y) + (x+6y)^2$$

$$(7) 2(t-7)(t+5) - (t+2)(t+6)$$

$$(5) (x+3)(x+4) + (x+5)(x-5)$$

$$(8) (a+b)(4a-b) + (2a+b)(b-2a)$$

$$(9) 5(x-6)(x-3) + (x+7)^2$$

$$(12) (6x+7y)^2 - 4(3x+5y)(3x-5y)$$

$$(10) (x-8)(x+1) - (x-5)^2$$

$$(13) (x-y)^2 - x(x-2y)$$

$$(11) (x+9)^2 + (x-4)^2$$

$$(14) (x+8)^2 + (x-7)(x-9)$$



$$(15) (x-2)(x+6) + (x+2)(x-3)$$

$$(18) (2x-5)(2x+3) + 3(x+2)^2$$

$$(16) (3x+y)^2 - (2x+y)(2x-3y)$$

$$(19) 4(x+9)(x-2) - 3(x-4)(x+6)$$

$$(17) (a-2)(a+2) + (2a+1)^2$$

$$(20) (-y+2)(-y-2) + (2y-3)^2$$

$$(21) (m+3)(m-3) - (m-4)(m+7) + (m+5)^2$$

$$(24) \left(2a + \frac{b}{4}\right)^2 - \left(2a - \frac{b}{4}\right)^2$$

$$(22) (x+5)(x+3) - (x+6)(x-6)$$

$$(25) (a+3)(a+15) + (2a-9)(2a+5)$$

$$(23) (x+3)^2 - (x-1)^2$$

$$(26) 2(5m-2n)^2 + 3(5m+2n)^2$$

$$(27) (a - 3b)(a - 4b) - (a - 2b)^2$$

$$(30) (x + 5)^2 - (x + 3)(x - 3)$$

$$(28) 3(6x + 7y)(6x - 7y) - 5(4x - y)(4x + y)$$

$$(31) (4x - 3)(3x + 1) - 3(2x - 1)^2$$

$$(29) (a + 10)^2 + (a - 10)^2$$

$$(32) (a - 3)(a - 6) - 2a(5 - a)$$

$$(33) \quad 5(m+3)(m-3) - (3m+1)(3m-4)$$

$$(36) \quad (x-2)(x+3) + (x-1)(x-4)$$

$$(34) \quad (5x-2)^2 - 4(x-1)(x+1)$$

$$(37) \quad 2(x+4)(x+1) + (x-6)(x-4)$$

$$(35) \quad (a+8)^2 + (a+3)(a-3)$$

$$(38) \quad 2(x+3)(x+5) - (x+3)(x-5)$$

$$(39) 3(x-9)(x+3) + 2(x-3)(x-9)$$

$$(2) (x-y-1)(x-y-5)$$

$$(40) 3(x+5)(x+2) - 2(x-5)(x-9)$$

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

## 7 展開/置き換え

$$(1) (x+y+2)(x+y-2)$$

$$(4) (x+y-4)(x+y+3)$$

$$(5) (x + y + 3)(x + y + 5)$$

$$(8) (2x - 2y + z)^2$$

$$(6) (a + b + c)^2$$

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

$$(7) (x - y - z)^2$$

$$(10) (2x + 2y + z)^2$$

$$(11) (a + b + 6)(a - b + 6)$$

$$(14) (2x + y - 3)(2x - y - 3)$$

$$(12) (a + b + c)(a - b + c)$$

$$(15) (x + y + 2)(x - y + 2)$$

$$(13) (a - 4b + 5)(a + 4b + 5)$$

$$(16) (a + b - c)(a - b + c)$$

$$(17) (x - y + 2)(x + y - 2)$$

$$(20) (x + 2y - 1)(3x - 2y + 1)$$

$$(18) (2x + y - 3)(x - y + 3)$$

$$(21) (a + b + 2)(a + b + 3) - (a + b + 5)(a + b)$$

$$(19) (a - 2b + c)(2b - a + c)$$

$$(22) (5m + 2n)^2 - (5m + n)(5m + 3n)$$



$$(23) (x + y + 7)(x + y - 4)$$

$$(26) (a + b + c)(a - b + c)$$

$$(24) (3x + y + 3z)^2$$

$$(25) (x - 2y + 2)(x + 2y - 2)$$