



整式の計算の基本

年 組 番 ID :
氏名

解 答

解答

- 1 (1) $4x^7$ (2) $-27x^7$ (3) $10x^3y^4$ (4) $-8x^4y^9$
- 2 (1) $2x^3-9x^2+11x-3$ (2) $-3x^3-7x^2+x+6$ (3) $2x^3+7x^2+8x+3$

解説

1 (1) $4x^3 \times x^4 = 4x^{3+4} = 4x^7$

(2) $(-3x^2)^3 \times x = (-3)^3 x^{2 \times 3} \times x$
 $= -27 \times x^6 \times x$
 $= -27 \times x^{6+1}$
 $= -27x^7$

(3) $5xy^3 \times 2x^2y = 5 \times 2 \times x^{1+2} \times y^{3+1}$
 $= 10x^3y^4$

(4) $xy^3 \times (-2xy^2)^3 = xy^3 \times (-2)^3 x^3 y^{2 \times 3}$
 $= xy^3 \times (-8) x^3 y^6$
 $= -8x^{1+3} y^{3+6}$
 $= -8x^4 y^9$

2 (1) $(x^2-3x+1)(2x-3) = (2x^3-6x^2+2x) - (3x^2-9x+3)$
 $= 2x^3-9x^2+11x-3$

(2) $(-3x^2-x+3)(x+2) = (-3x^3-x^2+3x) + (-6x^2-2x+6)$
 $= -3x^3-7x^2+x+6$

(3) $(2x+3)(1+2x+x^2) = (2x+4x^2+2x^3) + (3+6x+3x^2)$
 $= 2x^3+7x^2+8x+3$



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- 1 (1) $2x^8$ (2) $-8x^7$ (3) $12x^6y^6$ (4) $-18x^6y^3$
 2 (1) x^3-5x^2+6x-8 (2) $4x^3+12x^2+7x-3$ (3) $-x^3-6x^2-13x-10$

解説

$$1 (1) 2x^2+x^6=2x^{2+6} \\ =2x^8$$

$$(2) (2x^3)^2 \times (-2x) = 2^2 x^{3 \times 2} \times (-2x) \\ = 4 \times (-2) \times x^6 \times x \\ = 4 \times (-2) \times x^{6+1} \\ = -8x^7$$

$$(3) 3x^3y^2 \times 4x^3y^4 = 3 \times 4 \times x^{3+3} \times y^{2+4} \\ = 12x^6y^6$$

$$(4) -2x^2y \times (3x^2y)^2 = -2x^2y \times 3^2 x^{2 \times 2} y^2 \\ = -2x^2y \times 9x^4y^2 \\ = -2 \times 9 \times x^{2+4} \times y^{1+2} \\ = -18x^6y^3$$

$$2 (1) (x^3-x+2) - (x-4) = (x^3-x^2+2x) - (4x^2-4x+8) \\ = x^3-5x^2+6x-8$$

$$(2) (3x+2x^2-1) + (2x+3) = (6x^2+4x^3-2x) + (9x+6x^2-3) \\ = 4x^3+12x^2+7x-3$$

$$(3) -(x+2) + (x^2+4x+5) = -(x^3+4x^2+5x) - (2x^2+8x+10) \\ = -x^3-6x^2-13x-10$$



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- 1 (1) ① $5a^3+a^2+6a-3$ ② $-xy^3-xy^2+3y+2x^2+3$
 (2) ① $-3x+6y+9z$ ② $-7x+22y+12z$ ③ $-13x+30y+36z$
- 2 (1) x^6 (2) x^8 (3) $-27x^3y^{12}$ (4) $36x^6y^8$
 (5) $2x^3+3x^2-5x-3$ (6) $2x^3+9x^2-2x+15$

解説

1 (1) ① $4a+6a^2-3+2a+5a^3-5a^2=5a^3+(6-5)a^2+(4+2)a-3$
 $=5a^3+a^2+6a-3$

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

(2) ① $-A+2B$
 $=-(x+2y-3z)+2(-x+4y+3z)$
 $=(-1-2)x+(-2+8)y+(3+6)z$
 $=-3x+6y+9z$

② $A+2B-3C$
 $=(x+2y-3z)+2(-x+4y+3z)-3(2x-4y-3z)$
 $=(1-2-6)x+(2+8+12)y+(-3+6+9)z$
 $=-7x+22y+12z$

③ $A+3C-4(A-2B+C)$
 $=-3A+8B-C$
 $=-3(x+2y-3z)+8(-x+4y+3z)-(2x-4y-3z)$
 $=(-3-8-2)x+(-6+32+4)y+(9+24+3)z$
 $=-13x+30y+36z$

2 (4) $(-2x^2y)^2(3xy^3)^2=(-2)^2x^4y^2 \times 3^2x^2y^6$
 $=36x^6y^8$

(5) $(x^2+x-3)(2x+1)=(2x^3+2x^2-6x)+(x^2+x-3)$
 $=2x^3+3x^2-5x-3$

(6) $(3-x+2x^2)(5+x)=(15-5x+10x^2)+(3x-x^2+2x^3)$
 $=2x^3+9x^2-2x+15$



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- 1 (1) ① $-2a^3+5a^2-3a+4$ ② $b^2+(a^2+4a+4)b-3a+5$
 (2) ① $-7x-7y+2z$ ② $4x+12y-4z$ ③ $-6x+10y-4z$
- 2 (1) $4x^8$ (2) x^8 (3) $4x^4y^8$ (4) $-72x^{13}y^8$
 (5) $6x^3-11x^2-8x-5$ (6) $-x^4+2x^3-2x^2+6x+3$

解説

1 (1) ① $3a-2a^3-6a+5a^2+4=-2a^3+5a^2+(3-6)a+4$
 $=-2a^3+5a^2-3a+4$

② $ba^2+b^2+4ab-3a+4b+5=b^2+(a^2+4a+4)b-3a+5$

(2) ① $B+2C$
 $= (x+3y)+2(-4x-5y+z) = (1-8)x+(3-10)y+2z$
 $= -7x-7y+2z$

② $-A+2B-C$
 $= -(2x-y+3z)+2(x+3y)-(-4x-5y+z)$
 $= (-2+2+4)x+(1+6+5)y+(-3-1)z$
 $= 4x+12y-4z$

③ $2B+3C-(2A-4B+C)$
 $= -2A+6B+2C$
 $= -2(2x-y+3z)+6(x+3y)+2(-4x-5y+z)$
 $= (-4+6-8)x+(2+18-10)y+(-6+2)z$
 $= -6x+10y-4z$

2 (4) $(3x^2y)^2(-2x^3y^2)^3=3^2x^4y^2 \times (-2)^3x^9y^6$
 $= -72x^{13}y^8$

(5) $(3x^2+2x+1)(2x-5)=(6x^3+4x^2+2x)-(15x^2+10x+5)$
 $= 6x^3-11x^2-8x-5$

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