

第 34 回因数分解コンクール計算用紙

*問題用紙は切り離して用いてもかまわない

*有理数の範囲で因数分解すること

(根号 $\sqrt{\quad}$ を使わずに因数分解すること)

*因数内のすべての項にマイナスがある場合には必ずくり出すこと

$$\text{例 } (x-y)(-a-b-c) = -(x-y)(a+b+c)$$

第34回 因数分解コンクール問題用紙 NO. 1

(1) $4x - 28$

(2) $6a + 12b - 24c$

(3) $25x^2 - 75xy + 1000y^2$

(4) $25x^2 - 16y^2$

(5) $9x^2 - 12xy + 4y^2$

(6) $9x^3y^2 + 6x^2y^2 + 9x^2y^3$

(7) $xyz + xz - yz$

(8) $ax + 2ax^2 + 2a - 3ax$

(9) $10a^2 - 10000a^2b^2$

(10) $x^2 + 12x + 36$

(11) $16x^2 - 8x + 1$

(12) $(2xy)^4 - (2xy)^3 + (2xy)^2$

(13) $9 - x^2y^2$

(14) $4x^2 - 16$

(15) $4x^2y^2 + 8xyz + 4z^2$

(16) $2x^3 - 6x^2 - 4x$

(17) $2x^2 + 4x - 3x^2$

(18) $x^2 + 3(-4x + 12)$

(19) $x^6 + x^4$

(20) $x^6 - x^4$

(21) $x^6 - y^4$

(22) $x^4 - y^4$

(23) $99x^2 + 132x + 44$

(24) $-x^2 - xy - y^2 - yx$

(25) $2014xy^2 - 159xy$

第 34 回 因数分解コンクール問題用紙 NO. 2

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

(2) $x^2 - 5x + 6$

(3) $x^2 - 4x - 21$

(4) $x^2 + 13x + 40$

(5) $x^2 - x - 90$

(6) $x^2 + 11x - 42$

(7) $-x^2 - x + 42$

(8) $x^2 - 14x - 72$

(9) $x^2 - 2014x + 28000$

(10) $x^2 + 1005x - 2014$

(11) $x^2 - 125x + 2014$

(12) $6x^2 + 13x + 6$

(13) $6x^2 - 37x + 6$

(14) $6x^2 + 15x + 6$

(15) $2x^2 - 3x - 2$

(16) $17x^2 + 25x - 18$

(17) $280x^2 - 34x + 1$

(18) $20x^2 - 2014x + 1400$

(19) $2014x^2 - 15x - 1$

(20) $x^2y^2 + 5xy - 36$

(21) $x^4 + 13x^2y^2 + 36y^4$

(22) $x^4 - 13x^2 + 42$

(23) $2x^4 + x^3 - 15x^2$

(24) $33x^4y^2 + 28x^2y^2 - 5y^2$

(25) $4x^4 - 14y^4 - 240x^2y^2 + 2014y^4$

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

(2) $xyz+xz-yz-z$

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

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

(5) $a(x-y)-b(y-x)-cy+cx$

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

(7) $2(2x^2-1)^2-8$

(8) $a^2(x+1)^2+4(a+1)(x+1)^2$

(9) $x^3+x^2+x+1+2x+2$

(10) $9x^2-4y^2+24x+16$

(11) $ax^2-a^2x+a^2-a$

(12) $x^2-(a+b)x+ab$

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

(14) $x^2+(3y+2)x+2y^2+3y+1$

(15) $x^2+xy-2y^2+2x+7y-3$

(16) $4x^2-4xy+y^2+12x-6y+9$

(17) $4x^4+3x^2+1$

(18) x^4-12x^2+16

(19) $3x^4-24x^2+48$

(20) $(x-1)^4+4$

(21) $(3x-4)y^2+(3y-4)(3x-4)$

(22) $x^2y(z-1)-x(y^2+z-1)+y$

(23) $(5x+6y+5)^2-(2x+3y+2)^2+4(x+y+1)$

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

(25) $ax^3+(a+1)x^2+(a+1)x+1$

- (1) $x^3 + 27$
- (2) $8x^3 - 64y^3$
- (3) $x^3 + 3x^2 + 3x + 1$
- (4) $x^3 + 3x^2 - 3x - 1$
- (5) $x^2 + 4y^2 + 9z^2 + 4xy + 12yz + 6zx$
- (6) $x^3 + 8y^6z^6 + 6x^2y^2z^2 + 12xy^4z^4$
- (7) $x^3 + 4x^2 + x - 6$
- (8) $x^3 - 11x + 6$
- (9) $2x^3 - 5x^2 - 7x - 2$
- (10) $x^3 + y^3 - 1 + 3xy$
- (11) $x^3 + y^3 + z^3 - (x + y + z)^3 - 3xyz$
- (12) $x^5 + 5x^4y + 6x^3y^2 + 6x^2y^3 + 5xy^4 + y^5$
- (13) $x^4 + 2x^3 - 21x^2 - 6x + 9$
- (14) $2x^4 + x^3 - 2x^2 + x + 2$
- (15) $x^4 - 2x^3 - 1005x^2 + 2014x - 2014$
- (16) $x(x+2)(2x+3)(2x-1) - 8$
- (17) $(x^2 + 4x + 3)(x^2 - 8x + 12) - 40x^2$
- (18) $(x+y)(y-z)(x-z) - xyz$
- (19) $xy^3 - y^3 - 2xy + x + 2y - 1$
- (20) $4 - 12x + 9x^2 - 10x^2 + 15x^3 + 4x^4$
- (21) $(x+2y)^3 - (4x-6z)^3 + (3x-2y-6z)^3$
- (22) $2x^4 + x^2 - x + 1$
- (23) $8x^3 + y^3 - 4(x-14) - 2(12x+1)y$
- (24) $x^3 - 36x^2 - 939x + 2014$
- (25) $x(x^4 - 7x^2) + x^3 + 5x - 3$