因数分解 発展（20問）　版A

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $(x + y)^2 - 8(x + y) + 12 =$

(2) $45x^2 - 125 =$

(3) $x^4 - 61x^2 + 900 =$

(4) $x^2 + 5xy + 6y^2 + 2x + y - 15 =$

(5) $(x + y)^2 - 5(x + y) - 14 =$

(6) $x^4 - 16 =$

(7) $x^2 - y^2 + 12y - 36 =$

(8) $36x^2 - 144x + 140 =$

(9) $x^2 - y^2 - x + 5y - 6 =$

(10) $x^2 - y^2 + 6y - 9 =$

(11) $(x + y)^2 - (x + y) - 42 =$

(12) $x^2 - xy - 6y^2 + x + 22y - 20 =$

(13) $12x^2 + 88x + 140 =$

(14) $12x^2 - 52x + 16 =$

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

(16) $x^2 - y^2 + 8y - 16 =$

(17) $(x + y)^2 + 4(x + y) - 5 =$

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

(19) $x^2 - 3xy + 2y^2 + 2x - 8 =$

(20) $x^2 - y^2 + 10y - 25 =$

因数分解 発展（20問）　版B

組　　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $(x + y)^2 + 9(x + y) + 14 =$

(2) $x^2 - y^2 + 6y - 9 =$

(3) $(x + y)^2 - 8(x + y) + 7 =$

(4) $27x^2 + 27x - 84 =$

(5) $x^4 - 52x^2 + 576 =$

(6) $x^2 + 4xy + 3y^2 + 3x + 7y + 2 =$

(7) $x^4 - 14x^2 - 32 =$

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

(9) $x^2 - y^2 + 12y - 36 =$

(10) $x^2 + 2xy - 3y^2 + 3x + 17y - 10 =$

(11) $(x + y)^2 + 10(x + y) + 21 =$

(12) $5x^2 - 15x - 140 =$

(13) $x^2 - xy - 2y^2 + 9x - 3y + 20 =$

(14) $(x + y)^2 + 10(x + y) + 24 =$

(15) $45x^2 - 45x - 50 =$

(16) $x^4 - 24x^2 - 25 =$

(17) $x^4 - 37x^2 + 36 =$

(18) $16x^2 - 196 =$

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

(20) $x^2 - y^2 + 8y - 16 =$

因数分解 発展（20問）　版C

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

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

(2) $x^4 - 35x^2 - 36 =$

(3) $x^2 - y^2 + 10y - 25 =$

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

(5) $x^2 + 5xy + 6y^2 + 7x + 18y + 12 =$

(6) $(x + y)^2 + 13(x + y) + 42 =$

(7) $3x^2 + 9x - 54 =$

(8) $15x^2 + 55x - 20 =$

(9) $12x^2 - 8x - 4 =$

(10) $x^2 + 5xy + 6y^2 + 2y - 4 =$

(11) $x^4 - 13x^2 + 36 =$

(12) $x^2 - 9y^2 - 2x - 18y - 8 =$

(13) $12x^2 - 16x - 16 =$

(14) $(x + y)^2 - 6(x + y) - 7 =$

(15) $x^2 - y^2 + 8y - 16 =$

(16) $x^2 - 9y^2 + 10x + 25 =$

(17) $x^4 - 52x^2 + 576 =$

(18) $x^4 + 2x^2 - 24 =$

(19) $x^2 - y^2 + 12y - 36 =$

(20) $(x + y)^2 + 9(x + y) + 14 =$

因数分解 発展（20問）　版D

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $(x + y)^2 - 2(x + y) - 15 =$

(2) $x^4 - 52x^2 + 576 =$

(3) $6x^2 + 33x - 63 =$

(4) $(x + y)^2 - (x + y) - 30 =$

(5) $x^2 - y^2 + 6y - 9 =$

(6) $x^2 - 9y^2 - 6x + 12y + 5 =$

(7) $x^2 - y^2 + 10y - 25 =$

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

(9) $x^2 - y^2 + 8y - 16 =$

(10) $x^2 - 5xy + 6y^2 + 7x - 17y + 12 =$

(11) $x^2 - y^2 + 12y - 36 =$

(12) $x^4 - 33x^2 - 108 =$

(13) $2x^2 - 18 =$

(14) $x^4 - 3x^2 - 4 =$

(15) $4x^2 - 26x + 30 =$

(16) $(x + y)^2 - 9(x + y) + 20 =$

(17) $x^2 + 3xy + 2y^2 - 9x - 14y + 20 =$

(18) $x^4 - 14x^2 - 32 =$

(19) $(x + y)^2 - 7(x + y) + 12 =$

(20) $9x^2 - 33x + 30 =$

因数分解 発展（20問）　版E

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $(x + y)^2 + 6(x + y) - 7 =$

(2) $x^2 - xy - 6y^2 - 2x - 9y - 3 =$

(3) $18x^2 + 15x - 18 =$

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

(5) $(x + y)^2 - 2(x + y) - 35 =$

(6) $x^2 - y^2 + 6y - 9 =$

(7) $45x^2 - 45x - 50 =$

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

(9) $x^4 - 20x^2 + 64 =$

(10) $20x^2 - 60x - 35 =$

(11) $x^2 - y^2 + 10y - 25 =$

(12) $x^2 - y^2 + 2y - 1 =$

(13) $x^4 - 10x^2 + 9 =$

(14) $x^2 - xy - 6y^2 + 5x + 6 =$

(15) $x^4 - 26x^2 + 25 =$

(16) $x^4 + 4x^2 - 5 =$

(17) $(x + y)^2 + 4(x + y) - 5 =$

(18) $9x^2 + 12x - 45 =$

(19) $x^2 - 5xy + 6y^2 - 5x + 11y + 4 =$

(20) $(x + y)^2 + 3(x + y) - 10 =$

因数分解 発展（20問）　版F

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $6x^2 + 10x - 56 =$

(2) $x^2 + 3xy + 2y^2 + 5x + 9y + 4 =$

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

(4) $x^2 - xy - 6y^2 - 4x - 13y - 5 =$

(5) $x^2 - y^2 + 6y - 9 =$

(6) $x^2 + xy - 6y^2 + x + 18y - 12 =$

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

(8) $(x + y)^2 + 4(x + y) + 3 =$

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

(10) $x^2 - y^2 + 2y - 1 =$

(11) $10x^2 + 65x + 30 =$

(12) $36x^2 + 36x - 112 =$

(13) $x^4 - 10x^2 - 96 =$

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

(15) $x^4 - 32x^2 - 144 =$

(16) $(x + y)^2 + (x + y) - 12 =$

(17) $x^4 - 13x^2 + 36 =$

(18) $30x^2 + 125x + 70 =$

(19) $x^2 + xy - 6y^2 + 2x - 19y - 15 =$

(20) $x^2 - y^2 + 12y - 36 =$

因数分解 発展（20問）　版G

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $x^4 - 13x^2 + 36 =$

(2) $(x + y)^2 - 8(x + y) + 7 =$

(3) $6x^2 + 52x + 70 =$

(4) $(x + y)^2 + 8(x + y) + 7 =$

(5) $36x^2 - 84x + 40 =$

(6) $x^2 + 3xy + 2y^2 - 3x - 8y - 10 =$

(7) $x^4 - 16 =$

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

(9) $x^4 - 17x^2 + 16 =$

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

(11) $(x + y)^2 + 5(x + y) - 14 =$

(12) $x^2 - 2xy - 3y^2 + x + 13y - 12 =$

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

(14) $15x^2 + 20x - 75 =$

(15) $x^2 - y^2 + 8y - 16 =$

(16) $x^2 - y^2 + 6y - 9 =$

(17) $6x^2 + 50x + 84 =$

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

(19) $x^4 - 5x^2 + 4 =$

(20) $x^2 + 2xy - 3y^2 + 4x - 8y - 5 =$

因数分解 発展（20問）　版H

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $x^4 - 25x^2 + 144 =$

(2) $(x + y)^2 + 4(x + y) + 3 =$

(3) $x^2 - 4xy + 3y^2 - 7x + 15y + 12 =$

(4) $x^2 - xy - 2y^2 - 2x + 10y - 8 =$

(5) $x^2 - y^2 + 6y - 9 =$

(6) $x^4 - 5x^2 + 4 =$

(7) $x^4 - 34x^2 + 225 =$

(8) $12x^2 + 32x + 20 =$

(9) $x^2 - y^2 + 12y - 36 =$

(10) $(x + y)^2 - (x + y) - 12 =$

(11) $x^2 - 3xy + 2y^2 - 6x + 11y + 5 =$

(12) $(x + y)^2 - 2(x + y) - 35 =$

(13) $15x^2 - 5x - 70 =$

(14) $12x^2 - 3 =$

(15) $(x + y)^2 - (x + y) - 42 =$

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

(17) $x^4 - 8x^2 - 9 =$

(18) $x^2 - 9y^2 + x + 27y - 20 =$

(19) $x^2 - y^2 + 8y - 16 =$

(20) $4x^2 + 14x - 30 =$

因数分解 発展（20問）　版I

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

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

(2) $(x + y)^2 + 7(x + y) + 10 =$

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

(4) $8x^2 - 36x - 140 =$

(5) $8x^2 + 40x + 42 =$

(6) $9x^2 + 12x - 21 =$

(7) $(x + y)^2 - 4(x + y) - 5 =$

(8) $x^2 - y^2 + 12y - 36 =$

(9) $x^2 - y^2 + 10y - 25 =$

(10) $(x + y)^2 - 5(x + y) + 6 =$

(11) $x^4 - 40x^2 + 144 =$

(12) $x^2 + xy - 6y^2 - 6x - 8y + 8 =$

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

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

(15) $x^4 - 17x^2 + 16 =$

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

(17) $x^4 - 37x^2 + 36 =$

(18) $24x^2 + 68x + 20 =$

(19) $x^4 - 25x^2 + 144 =$

(20) $x^2 - xy - 2y^2 - 7x + 5y + 12 =$

因数分解 発展（20問）　版J

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $x^4 - 40x^2 + 144 =$

(2) $x^4 + 4x^2 - 5 =$

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

(4) $6x^2 - 3x - 9 =$

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

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

(7) $x^4 - 17x^2 + 16 =$

(8) $24x^2 + 92x + 80 =$

(9) $(x + y)^2 - (x + y) - 42 =$

(10) $x^2 + 2xy - 3y^2 + 10x + 10y + 25 =$

(11) $x^2 - y^2 + 12y - 36 =$

(12) $x^2 - y^2 + 8y - 16 =$

(13) $x^4 - 35x^2 - 36 =$

(14) $x^2 - 2xy - 3y^2 - 8x + 4y + 15 =$

(15) $(x + y)^2 + 13(x + y) + 42 =$

(16) $x^2 + xy - 2y^2 - 7x - 5y + 12 =$

(17) $(x + y)^2 - (x + y) - 12 =$

(18) $24x^2 - 124x + 140 =$

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

(20) $5x^2 + 5x - 60 =$

因数分解 発展（20問）　版K

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $2x^2 + 16x + 30 =$

(2) $6x^2 + 16x - 6 =$

(3) $x^2 - 2xy - 3y^2 + 2x + 10y - 8 =$

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

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

(6) $30x^2 + 25x - 105 =$

(7) $(x + y)^2 - 13(x + y) + 42 =$

(8) $(x + y)^2 - 2(x + y) - 24 =$

(9) $x^4 - 45x^2 + 324 =$

(10) $x^4 - 32x^2 - 144 =$

(11) $x^2 - 5xy + 6y^2 + 5x - 14y + 4 =$

(12) $x^2 - y^2 + 8y - 16 =$

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

(14) $x^4 - 37x^2 + 36 =$

(15) $6x^2 + 27x - 15 =$

(16) $x^2 - y^2 + 6y - 9 =$

(17) $(x + y)^2 + 9(x + y) + 20 =$

(18) $x^2 + 5xy + 6y^2 + 4x + 11y + 3 =$

(19) $x^2 - y^2 + 10y - 25 =$

(20) $x^2 + 5xy + 6y^2 - 4x - 11y + 3 =$

因数分解 発展（20問）　版L

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

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

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

(3) $x^4 - 34x^2 + 225 =$

(4) $12x^2 - 76x + 80 =$

(5) $x^4 - 21x^2 - 100 =$

(6) $4x^2 - 16x - 20 =$

(7) $(x + y)^2 + 10(x + y) + 21 =$

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

(9) $x^2 + 4xy + 3y^2 - 2x + 2y - 8 =$

(10) $x^4 - 17x^2 + 16 =$

(11) $30x^2 + 85x + 35 =$

(12) $x^2 + 5xy + 6y^2 - 7x - 19y + 10 =$

(13) $x^2 - y^2 + 2y - 1 =$

(14) $x^2 + xy - 6y^2 - x - 8y - 2 =$

(15) $x^2 + xy - 2y^2 + x - 7y - 6 =$

(16) $(x + y)^2 - 11(x + y) + 28 =$

(17) $(x + y)^2 + 4(x + y) - 21 =$

(18) $15x^2 - 5x - 20 =$

(19) $x^2 - y^2 + 8y - 16 =$

(20) $x^2 - y^2 + 12y - 36 =$

因数分解 発展（20問）　版M

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $x^4 - 21x^2 - 100 =$

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

(3) $x^4 - 34x^2 - 72 =$

(4) $x^4 - 32x^2 - 144 =$

(5) $x^2 - y^2 + 8y - 16 =$

(6) $12x^2 - 92x + 56 =$

(7) $x^2 - y^2 + 2y - 1 =$

(8) $x^2 + 2xy - 3y^2 + x - 5y - 2 =$

(9) $x^2 - 2xy - 3y^2 + 10x - 10y + 25 =$

(10) $(x + y)^2 + 10(x + y) + 21 =$

(11) $36x^2 + 36x + 8 =$

(12) $(x + y)^2 + 7(x + y) + 12 =$

(13) $6x^2 + 15x - 75 =$

(14) $x^4 - 61x^2 + 900 =$

(15) $x^2 - 2xy - 3y^2 + x - 19y - 20 =$

(16) $x^2 + 2xy - 3y^2 - 7x - 13y + 10 =$

(17) $x^2 - y^2 + 10y - 25 =$

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

(19) $18x^2 - 87x + 84 =$

(20) $x^2 - y^2 + 6y - 9 =$

因数分解 発展（20問）　版N

組　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

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

(2) $24x^2 - 20x - 16 =$

(3) $(x + y)^2 + (x + y) - 12 =$

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

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

(6) $(x + y)^2 + 3(x + y) - 18 =$

(7) $12x^2 + 38x + 20 =$

(8) $x^2 + xy - 6y^2 + 10x + 5y + 25 =$

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

(10) $8x^2 - 36x - 72 =$

(11) $x^2 - y^2 + 12y - 36 =$

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

(13) $(x + y)^2 - 2(x + y) - 35 =$

(14) $x^4 - 21x^2 - 100 =$

(15) $6x^2 - 21x + 15 =$

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

(17) $x^4 - 41x^2 + 400 =$

(18) $x^2 - y^2 + 6y - 9 =$

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

(20) $x^2 - 9y^2 - 5x + 9y + 4 =$

因数分解 発展（20問）　版O

組　　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $x^4 - 34x^2 + 225 =$

(2) $x^2 - 2xy - 3y^2 + 3x - 17y - 10 =$

(3) $9x^2 - 84x + 147 =$

(4) $(x + y)^2 - 2(x + y) - 15 =$

(5) $30x^2 + 145x + 140 =$

(6) $x^2 - y^2 + 10y - 25 =$

(7) $x^2 - y^2 + 8y - 16 =$

(8) $(x + y)^2 - (x + y) - 42 =$

(9) $9x^2 - 39x - 30 =$

(10) $(x + y)^2 - 6(x + y) - 7 =$

(11) $x^2 - 9y^2 - 4x - 6y + 3 =$

(12) $(x + y)^2 - 11(x + y) + 30 =$

(13) $x^4 - 11x^2 - 80 =$

(14) $x^4 - 16 =$

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

(16) $10x^2 - 55x - 105 =$

(17) $x^2 + xy - 6y^2 + 3x - 11y - 4 =$

(18) $x^4 - 5x^2 + 4 =$

(19) $x^2 - 4y^2 - 2x + 12y - 8 =$

(20) $x^2 - y^2 + 2y - 1 =$

因数分解 発展（20問）　版P

組　　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

(1) $x^2 - 4y^2 - 7x + 6y + 10 =$

(2) $x^4 - 45x^2 + 324 =$

(3) $x^2 - y^2 + 12y - 36 =$

(4) $(x + y)^2 - 5(x + y) + 4 =$

(5) $(x + y)^2 + 9(x + y) + 20 =$

(6) $15x^2 + 85x + 50 =$

(7) $x^2 - y^2 + 2y - 1 =$

(8) $x^2 + 3xy + 2y^2 - 9x - 13y + 20 =$

(9) $(x + y)^2 - 9(x + y) + 18 =$

(10) $18x^2 - 54x + 28 =$

(11) $x^4 - 37x^2 + 36 =$

(12) $(x + y)^2 + 5(x + y) - 14 =$

(13) $15x^2 - 10x - 105 =$

(14) $x^2 + 4xy + 3y^2 + x - 5y - 12 =$

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

(16) $x^2 - y^2 + 8y - 16 =$

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

(18) $x^4 - 41x^2 + 400 =$

(19) $4x^2 - 4x - 80 =$

(20) $x^4 - 26x^2 + 25 =$

因数分解 発展（20問）　版Q

組　　番　　なまえ：＿＿＿＿＿＿＿＿＿＿　　／20問

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

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

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

(4) $16x^2 + 16x - 140 =$

(5) $(x + y)^2 + 10(x + y) + 21 =$

(6) $(x + y)^2 + 7(x + y) + 6 =$

(7) $x^2 - y^2 + 8y - 16 =$

(8) $20x^2 + 60x - 35 =$

(9) $x^4 - 13x^2 + 36 =$

(10) $x^2 - 9y^2 + 7x + 3y + 12 =$

(11) $x^2 - xy - 6y^2 - 7x - 4y + 10 =$

(12) $x^2 - xy - 2y^2 + 5x - 7y + 4 =$

(13) $(x + y)^2 - 5(x + y) - 14 =$

(14) $(x + y)^2 - 13(x + y) + 42 =$

(15) $x^2 - y^2 + 6y - 9 =$

(16) $12x^2 - 26x + 12 =$

(17) $x^4 - 10x^2 + 9 =$

(18) $4x^2 + 18x - 70 =$

(19) $x^4 - 10x^2 - 96 =$

(20) $x^2 + 3xy + 2y^2 + x + 4y - 6 =$

因数分解 発展（20問）　版Aの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

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(1) $(x+y)^2 - 8(x+y) + 12$
$= (x+y-6)(x+y-2)$

(2) $45x^2 - 125$
$= 5(3x-5)(3x+5)$

(3) $x^4 - 61x^2 + 900$
$= (x-6)(x-5)(x+5)(x+6)$

(4) $x^2 + 5xy + 6y^2 + 2x + y - 15$
$= (x+2y-3)(x+3y+5)$

(5) $(x+y)^2 - 5(x+y) - 14$
$= (x+y-7)(x+y+2)$

(6) $x^4 - 16$
$= (x-2)(x+2)(x^2+4)$

(7) $x^2 - y^2 + 12y - 36$
$= (x-y+6)(x+y-6)$

(8) $36x^2 - 144x + 140$
$= 4(3x-7)(3x-5)$

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

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

(11) $(x+y)^2 - (x+y) - 42$
$= (x+y-7)(x+y+6)$

(12) $x^2 - xy - 6y^2 + x + 22y - 20$
$= (x-3y+5)(x+2y-4)$

(13) $12x^2 + 88x + 140$
$= 4(x+5)(3x+7)$

(14) $12x^2 - 52x + 16$
$= 4(x-4)(3x-1)$

(15) $x^4 - 5x^2 + 4$
$= (x-2)(x-1)(x+1)(x+2)$

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

(17) $(x+y)^2 + 4(x+y) - 5$
$= (x+y-1)(x+y+5)$

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

(19) $x^2 - 3xy + 2y^2 + 2x - 8$
$= (x-2y+4)(x-y-2)$

(20) $x^2 - y^2 + 10y - 25$
$= (x-y+5)(x+y-5)$

因数分解 発展（20問）　版Bの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

(1) $(x + y)^2 + 9(x + y) + 14$

$= (x + y + 2)(x + y + 7)$

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

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

(3) $(x + y)^2 - 8(x + y) + 7$

$= (x + y - 7)(x + y - 1)$

(4) $27x^2 + 27x - 84$

$= 3(3x - 4)(3x + 7)$

(5) $x^4 - 52x^2 + 576$

$= (x - 6)(x - 4)(x + 4)(x + 6)$

(6) $x^2 + 4xy + 3y^2 + 3x + 7y + 2$

$= (x + y + 2)(x + 3y + 1)$

(7) $x^4 - 14x^2 - 32$

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

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

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

(9) $x^2 - y^2 + 12y - 36$

$= (x - y + 6)(x + y - 6)$

(10) $x^2 + 2xy - 3y^2 + 3x + 17y - 10$

$= (x - y + 5)(x + 3y - 2)$

(11) $(x + y)^2 + 10(x + y) + 21$

$= (x + y + 3)(x + y + 7)$

(12) $5x^2 - 15x - 140$

$= 5(x - 7)(x + 4)$

(13) $x^2 - xy - 2y^2 + 9x - 3y + 20$

$= (x - 2y + 5)(x + y + 4)$

(14) $(x + y)^2 + 10(x + y) + 24$

$= (x + y + 4)(x + y + 6)$

(15) $45x^2 - 45x - 50$

$= 5(3x - 5)(3x + 2)$

(16) $x^4 - 24x^2 - 25$

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

(17) $x^4 - 37x^2 + 36$

$= (x - 6)(x - 1)(x + 1)(x + 6)$

(18) $16x^2 - 196$

$= 4(2x - 7)(2x + 7)$

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

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

(20) $x^2 - y^2 + 8y - 16$

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

因数分解 発展（20問）　版Cの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

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

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

(2) $x^4 - 35x^2 - 36$

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

(3) $x^2 - y^2 + 10y - 25$

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

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

$= (x + y - 1)(x + y + 4)$

(5) $x^2 + 5xy + 6y^2 + 7x + 18y + 12$

$= (x + 2y + 4)(x + 3y + 3)$

(6) $(x + y)^2 + 13(x + y) + 42$

$= (x + y + 6)(x + y + 7)$

(7) $3x^2 + 9x - 54$

$= 3(x - 3)(x + 6)$

(8) $15x^2 + 55x - 20$

$= 5(x + 4)(3x - 1)$

(9) $12x^2 - 8x - 4$

$= 4(x - 1)(3x + 1)$

(10) $x^2 + 5xy + 6y^2 + 2y - 4$

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

(11) $x^4 - 13x^2 + 36$

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

(12) $x^2 - 9y^2 - 2x - 18y - 8$

$= (x - 3y - 4)(x + 3y + 2)$

(13) $12x^2 - 16x - 16$

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

(14) $(x + y)^2 - 6(x + y) - 7$

$= (x + y - 7)(x + y + 1)$

(15) $x^2 - y^2 + 8y - 16$

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

(16) $x^2 - 9y^2 + 10x + 25$

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

(17) $x^4 - 52x^2 + 576$

$= (x - 6)(x - 4)(x + 4)(x + 6)$

(18) $x^4 + 2x^2 - 24$

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

(19) $x^2 - y^2 + 12y - 36$

$= (x - y + 6)(x + y - 6)$

(20) $(x + y)^2 + 9(x + y) + 14$

$= (x + y + 2)(x + y + 7)$

因数分解 発展（20問）　版Dの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

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

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

(2) x^4-52x^2+576

$=(x-6)(x-4)(x+4)(x+6)$

(3) $6x^2+33x-63$

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

(4) $(x+y)^2-(x+y)-30$

$=(x+y-6)(x+y+5)$

(5) x^2-y^2+6y-9

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

(6) $x^2-9y^2-6x+12y+5$

$=(x-3y-1)(x+3y-5)$

(7) $x^2-y^2+10y-25$

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

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

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

(9) $x^2-y^2+8y-16$

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

(10) $x^2-5xy+6y^2+7x-17y+12$

$=(x-3y+4)(x-2y+3)$

(11) $x^2-y^2+12y-36$

$=(x-y+6)(x+y-6)$

(12) x^4-33x^2-108

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

(13) $2x^2-18$

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

(14) x^4-3x^2-4

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

(15) $4x^2-26x+30$

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

(16) $(x+y)^2-9(x+y)+20$

$=(x+y-5)(x+y-4)$

(17) $x^2+3xy+2y^2-9x-14y+20$

$=(x+y-5)(x+2y-4)$

(18) x^4-14x^2-32

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

(19) $(x+y)^2-7(x+y)+12$

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

(20) $9x^2-33x+30$

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

因数分解 発展（20問）　版Eの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

(1) $(x+y)^2+6(x+y)-7$
$=(x+y-1)(x+y+7)$

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

(3) $18x^2+15x-18$
$=3(2x+3)(3x-2)$

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

(5) $(x+y)^2-2(x+y)-35$
$=(x+y-7)(x+y+5)$

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

(7) $45x^2-45x-50$
$=5(3x-5)(3x+2)$

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

(9) x^4-20x^2+64
$=(x-4)(x-2)(x+2)(x+4)$

(10) $20x^2-60x-35$
$=5(2x-7)(2x+1)$

(11) $x^2-y^2+10y-25$
$=(x-y+5)(x+y-5)$

(12) x^2-y^2+2y-1
$=(x-y+1)(x+y-1)$

(13) x^4-10x^2+9
$=(x-3)(x-1)(x+1)(x+3)$

(14) $x^2-xy-6y^2+5x+6$
$=(x-3y+3)(x+2y+2)$

(15) x^4-26x^2+25
$=(x-5)(x-1)(x+1)(x+5)$

(16) x^4+4x^2-5
$=(x-1)(x+1)(x^2+5)$

(17) $(x+y)^2+4(x+y)-5$
$=(x+y-1)(x+y+5)$

(18) $9x^2+12x-45$
$=3(x+3)(3x-5)$

(19) $x^2-5xy+6y^2-5x+11y+4$
$=(x-3y-4)(x-2y-1)$

(20) $(x+y)^2+3(x+y)-10$
$=(x+y-2)(x+y+5)$

因数分解 発展（20問）　版Fの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

(1) $6x^2 + 10x - 56$
$= 2(x + 4)(3x - 7)$

(2) $x^2 + 3xy + 2y^2 + 5x + 9y + 4$
$= (x + y + 4)(x + 2y + 1)$

(3) $(x + y)^2 - 7(x + y) + 6$
$= (x + y - 6)(x + y - 1)$

(4) $x^2 - xy - 6y^2 - 4x - 13y - 5$
$= (x - 3y - 5)(x + 2y + 1)$

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

(6) $x^2 + xy - 6y^2 + x + 18y - 12$
$= (x - 2y + 4)(x + 3y - 3)$

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

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

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

(10) $x^2 - y^2 + 2y - 1$
$= (x - y + 1)(x + y - 1)$

(11) $10x^2 + 65x + 30$
$= 5(x + 6)(2x + 1)$

(12) $36x^2 + 36x - 112$
$= 4(3x - 4)(3x + 7)$

(13) $x^4 - 10x^2 - 96$
$= (x - 4)(x + 4)(x^2 + 6)$

(14) $x^4 + x^2 - 2$
$= (x - 1)(x + 1)(x^2 + 2)$

(15) $x^4 - 32x^2 - 144$
$= (x - 6)(x + 6)(x^2 + 4)$

(16) $(x + y)^2 + (x + y) - 12$
$= (x + y - 3)(x + y + 4)$

(17) $x^4 - 13x^2 + 36$
$= (x - 3)(x - 2)(x + 2)(x + 3)$

(18) $30x^2 + 125x + 70$
$= 5(2x + 7)(3x + 2)$

(19) $x^2 + xy - 6y^2 + 2x - 19y - 15$
$= (x - 2y - 3)(x + 3y + 5)$

(20) $x^2 - y^2 + 12y - 36$
$= (x - y + 6)(x + y - 6)$

因数分解 発展（20問）　版Gの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

(1) $x^4 - 13x^2 + 36$
$= (x - 3)(x - 2)(x + 2)(x + 3)$

(2) $(x + y)^2 - 8(x + y) + 7$
$= (x + y - 7)(x + y - 1)$

(3) $6x^2 + 52x + 70$
$= 2(x + 7)(3x + 5)$

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

(5) $36x^2 - 84x + 40$
$= 4(3x - 5)(3x - 2)$

(6) $x^2 + 3xy + 2y^2 - 3x - 8y - 10$
$= (x + y - 5)(x + 2y + 2)$

(7) $x^4 - 16$
$= (x - 2)(x + 2)(x^2 + 4)$

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

(9) $x^4 - 17x^2 + 16$
$= (x - 4)(x - 1)(x + 1)(x + 4)$

(10) $(x + y)^2 + (x + y) - 2$
$= (x + y - 1)(x + y + 2)$

(11) $(x + y)^2 + 5(x + y) - 14$
$= (x + y - 2)(x + y + 7)$

(12) $x^2 - 2xy - 3y^2 + x + 13y - 12$
$= (x - 3y + 4)(x + y - 3)$

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

(14) $15x^2 + 20x - 75$
$= 5(x + 3)(3x - 5)$

(15) $x^2 - y^2 + 8y - 16$
$= (x - y + 4)(x + y - 4)$

(16) $x^2 - y^2 + 6y - 9$
$= (x - y + 3)(x + y - 3)$

(17) $6x^2 + 50x + 84$
$= 2(x + 6)(3x + 7)$

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

(19) $x^4 - 5x^2 + 4$
$= (x - 2)(x - 1)(x + 1)(x + 2)$

(20) $x^2 + 2xy - 3y^2 + 4x - 8y - 5$
$= (x - y - 1)(x + 3y + 5)$

因数分解 発展（20問）　版Hの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

(1) $x^4 - 25x^2 + 144$

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

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

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

(3) $x^2 - 4xy + 3y^2 - 7x + 15y + 12$

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

(4) $x^2 - xy - 2y^2 - 2x + 10y - 8$

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

(5) $x^2 - y^2 + 6y - 9$

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

(6) $x^4 - 5x^2 + 4$

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

(7) $x^4 - 34x^2 + 225$

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

(8) $12x^2 + 32x + 20$

$= 4(x + 1)(3x + 5)$

(9) $x^2 - y^2 + 12y - 36$

$= (x - y + 6)(x + y - 6)$

(10) $(x + y)^2 - (x + y) - 12$

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

(11) $x^2 - 3xy + 2y^2 - 6x + 11y + 5$

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

(12) $(x + y)^2 - 2(x + y) - 35$

$= (x + y - 7)(x + y + 5)$

(13) $15x^2 - 5x - 70$

$= 5(x + 2)(3x - 7)$

(14) $12x^2 - 3$

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

(15) $(x + y)^2 - (x + y) - 42$

$= (x + y - 7)(x + y + 6)$

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

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

(17) $x^4 - 8x^2 - 9$

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

(18) $x^2 - 9y^2 + x + 27y - 20$

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

(19) $x^2 - y^2 + 8y - 16$

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

(20) $4x^2 + 14x - 30$

$= 2(x + 5)(2x - 3)$

因数分解 発展（20問）　版Iの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

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

(2) $(x + y)^2 + 7(x + y) + 10$
$= (x + y + 2)(x + y + 5)$

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

(4) $8x^2 - 36x - 140$
$= 4(x - 7)(2x + 5)$

(5) $8x^2 + 40x + 42$
$= 2(2x + 3)(2x + 7)$

(6) $9x^2 + 12x - 21$
$= 3(x - 1)(3x + 7)$

(7) $(x + y)^2 - 4(x + y) - 5$
$= (x + y - 5)(x + y + 1)$

(8) $x^2 - y^2 + 12y - 36$
$= (x - y + 6)(x + y - 6)$

(9) $x^2 - y^2 + 10y - 25$
$= (x - y + 5)(x + y - 5)$

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

(11) $x^4 - 40x^2 + 144$
$= (x - 6)(x - 2)(x + 2)(x + 6)$

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

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

(14) $(x + y)^2 + (x + y) - 6$
$= (x + y - 2)(x + y + 3)$

(15) $x^4 - 17x^2 + 16$
$= (x - 4)(x - 1)(x + 1)(x + 4)$

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

(17) $x^4 - 37x^2 + 36$
$= (x - 6)(x - 1)(x + 1)(x + 6)$

(18) $24x^2 + 68x + 20$
$= 4(2x + 5)(3x + 1)$

(19) $x^4 - 25x^2 + 144$
$= (x - 4)(x - 3)(x + 3)(x + 4)$

(20) $x^2 - xy - 2y^2 - 7x + 5y + 12$
$= (x - 2y - 3)(x + y - 4)$

因数分解 発展（20問）　版Jの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

(1) $x^4 - 40x^2 + 144$

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

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

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

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

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

(4) $6x^2 - 3x - 9$

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

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

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

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

$= (x + y - 4)(x + y + 1)$

(7) $x^4 - 17x^2 + 16$

$= (x - 4)(x - 1)(x + 1)(x + 4)$

(8) $24x^2 + 92x + 80$

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

(9) $(x + y)^2 - (x + y) - 42$

$= (x + y - 7)(x + y + 6)$

(10) $x^2 + 2xy - 3y^2 + 10x + 10y + 25$

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

(11) $x^2 - y^2 + 12y - 36$

$= (x - y + 6)(x + y - 6)$

(12) $x^2 - y^2 + 8y - 16$

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

(13) $x^4 - 35x^2 - 36$

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

(14) $x^2 - 2xy - 3y^2 - 8x + 4y + 15$

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

(15) $(x + y)^2 + 13(x + y) + 42$

$= (x + y + 6)(x + y + 7)$

(16) $x^2 + xy - 2y^2 - 7x - 5y + 12$

$= (x - y - 4)(x + 2y - 3)$

(17) $(x + y)^2 - (x + y) - 12$

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

(18) $24x^2 - 124x + 140$

$= 4(2x - 7)(3x - 5)$

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

$= (x + y + 3)(x + 2y - 5)$

(20) $5x^2 + 5x - 60$

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

因数分解 発展（20問）　版Kの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

(1) $2x^2 + 16x + 30$
$= 2(x + 3)(x + 5)$

(2) $6x^2 + 16x - 6$
$= 2(x + 3)(3x - 1)$

(3) $x^2 - 2xy - 3y^2 + 2x + 10y - 8$
$= (x - 3y + 4)(x + y - 2)$

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

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

(6) $30x^2 + 25x - 105$
$= 5(2x - 3)(3x + 7)$

(7) $(x + y)^2 - 13(x + y) + 42$
$= (x + y - 7)(x + y - 6)$

(8) $(x + y)^2 - 2(x + y) - 24$
$= (x + y - 6)(x + y + 4)$

(9) $x^4 - 45x^2 + 324$
$= (x - 6)(x - 3)(x + 3)(x + 6)$

(10) $x^4 - 32x^2 - 144$
$= (x - 6)(x + 6)(x^2 + 4)$

(11) $x^2 - 5xy + 6y^2 + 5x - 14y + 4$
$= (x - 3y + 1)(x - 2y + 4)$

(12) $x^2 - y^2 + 8y - 16$
$= (x - y + 4)(x + y - 4)$

(13) $x^4 + x^2 - 2$
$= (x - 1)(x + 1)(x^2 + 2)$

(14) $x^4 - 37x^2 + 36$
$= (x - 6)(x - 1)(x + 1)(x + 6)$

(15) $6x^2 + 27x - 15$
$= 3(x + 5)(2x - 1)$

(16) $x^2 - y^2 + 6y - 9$
$= (x - y + 3)(x + y - 3)$

(17) $(x + y)^2 + 9(x + y) + 20$
$= (x + y + 4)(x + y + 5)$

(18) $x^2 + 5xy + 6y^2 + 4x + 11y + 3$
$= (x + 2y + 3)(x + 3y + 1)$

(19) $x^2 - y^2 + 10y - 25$
$= (x - y + 5)(x + y - 5)$

(20) $x^2 + 5xy + 6y^2 - 4x - 11y + 3$
$= (x + 2y - 3)(x + 3y - 1)$

因数分解 発展（20問）　版Lの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

(1) $x^2 - y^2 + 6y - 9$

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

(2) $(x + y)^2 - 6(x + y) - 7$

$= (x + y - 7)(x + y + 1)$

(3) $x^4 - 34x^2 + 225$

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

(4) $12x^2 - 76x + 80$

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

(5) $x^4 - 21x^2 - 100$

$= (x - 5)(x + 5)(x^2 + 4)$

(6) $4x^2 - 16x - 20$

$= 4(x - 5)(x + 1)$

(7) $(x + y)^2 + 10(x + y) + 21$

$= (x + y + 3)(x + y + 7)$

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

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

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

$= (x + y + 2)(x + 3y - 4)$

(10) $x^4 - 17x^2 + 16$

$= (x - 4)(x - 1)(x + 1)(x + 4)$

(11) $30x^2 + 85x + 35$

$= 5(2x + 1)(3x + 7)$

(12) $x^2 + 5xy + 6y^2 - 7x - 19y + 10$

$= (x + 2y - 5)(x + 3y - 2)$

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

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

(14) $x^2 + xy - 6y^2 - x - 8y - 2$

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

(15) $x^2 + xy - 2y^2 + x - 7y - 6$

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

(16) $(x + y)^2 - 11(x + y) + 28$

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

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

$= (x + y - 3)(x + y + 7)$

(18) $15x^2 - 5x - 20$

$= 5(x + 1)(3x - 4)$

(19) $x^2 - y^2 + 8y - 16$

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

(20) $x^2 - y^2 + 12y - 36$

$= (x - y + 6)(x + y - 6)$

因数分解 発展（20問）　版Mの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

(1) $x^4 - 21x^2 - 100$

$= (x - 5)(x + 5)(x^2 + 4)$

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

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

(3) $x^4 - 34x^2 - 72$

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

(4) $x^4 - 32x^2 - 144$

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

(5) $x^2 - y^2 + 8y - 16$

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

(6) $12x^2 - 92x + 56$

$= 4(x - 7)(3x - 2)$

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

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

(8) $x^2 + 2xy - 3y^2 + x - 5y - 2$

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

(9) $x^2 - 2xy - 3y^2 + 10x - 10y + 25$

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

(10) $(x + y)^2 + 10(x + y) + 21$

$= (x + y + 3)(x + y + 7)$

(11) $36x^2 + 36x + 8$

$= 4(3x + 1)(3x + 2)$

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

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

(13) $6x^2 + 15x - 75$

$= 3(x + 5)(2x - 5)$

(14) $x^4 - 61x^2 + 900$

$= (x - 6)(x - 5)(x + 5)(x + 6)$

(15) $x^2 - 2xy - 3y^2 + x - 19y - 20$

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

(16) $x^2 + 2xy - 3y^2 - 7x - 13y + 10$

$= (x - y - 5)(x + 3y - 2)$

(17) $x^2 - y^2 + 10y - 25$

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

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

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

(19) $18x^2 - 87x + 84$

$= 3(2x - 7)(3x - 4)$

(20) $x^2 - y^2 + 6y - 9$

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

因数分解 発展（20問）　版Nの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

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

(2) $24x^2 - 20x - 16$
$= 4(2x + 1)(3x - 4)$

(3) $(x + y)^2 + (x + y) - 12$
$= (x + y - 3)(x + y + 4)$

(4) $x^4 - 29x^2 + 100$
$= (x - 5)(x - 2)(x + 2)(x + 5)$

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

(6) $(x + y)^2 + 3(x + y) - 18$
$= (x + y - 3)(x + y + 6)$

(7) $12x^2 + 38x + 20$
$= 2(2x + 5)(3x + 2)$

(8) $x^2 + xy - 6y^2 + 10x + 5y + 25$
$= (x - 2y + 5)(x + 3y + 5)$

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

(10) $8x^2 - 36x - 72$
$= 4(x - 6)(2x + 3)$

(11) $x^2 - y^2 + 12y - 36$
$= (x - y + 6)(x + y - 6)$

(12) $(x + y)^2 - 4(x + y) - 12$
$= (x + y - 6)(x + y + 2)$

(13) $(x + y)^2 - 2(x + y) - 35$
$= (x + y - 7)(x + y + 5)$

(14) $x^4 - 21x^2 - 100$
$= (x - 5)(x + 5)(x^2 + 4)$

(15) $6x^2 - 21x + 15$
$= 3(x - 1)(2x - 5)$

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

(17) $x^4 - 41x^2 + 400$
$= (x - 5)(x - 4)(x + 4)(x + 5)$

(18) $x^2 - y^2 + 6y - 9$
$= (x - y + 3)(x + y - 3)$

(19) $x^4 - x^2 - 12$
$= (x - 2)(x + 2)(x^2 + 3)$

(20) $x^2 - 9y^2 - 5x + 9y + 4$
$= (x - 3y - 1)(x + 3y - 4)$

因数分解 発展（20問）　版Oの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

(1) $x^4 - 34x^2 + 225$

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

(2) $x^2 - 2xy - 3y^2 + 3x - 17y - 10$

$= (x - 3y - 2)(x + y + 5)$

(3) $9x^2 - 84x + 147$

$= 3(x - 7)(3x - 7)$

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

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

(5) $30x^2 + 145x + 140$

$= 5(2x + 7)(3x + 4)$

(6) $x^2 - y^2 + 10y - 25$

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

(7) $x^2 - y^2 + 8y - 16$

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

(8) $(x + y)^2 - (x + y) - 42$

$= (x + y - 7)(x + y + 6)$

(9) $9x^2 - 39x - 30$

$= 3(x - 5)(3x + 2)$

(10) $(x + y)^2 - 6(x + y) - 7$

$= (x + y - 7)(x + y + 1)$

(11) $x^2 - 9y^2 - 4x - 6y + 3$

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

(12) $(x + y)^2 - 11(x + y) + 30$

$= (x + y - 6)(x + y - 5)$

(13) $x^4 - 11x^2 - 80$

$= (x - 4)(x + 4)(x^2 + 5)$

(14) $x^4 - 16$

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

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

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

(16) $10x^2 - 55x - 105$

$= 5(x - 7)(2x + 3)$

(17) $x^2 + xy - 6y^2 + 3x - 11y - 4$

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

(18) $x^4 - 5x^2 + 4$

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

(19) $x^2 - 4y^2 - 2x + 12y - 8$

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

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

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

因数分解 発展（20問）　版Pの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

(1) $x^2 - 4y^2 - 7x + 6y + 10$

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

(2) $x^4 - 45x^2 + 324$

$= (x - 6)(x - 3)(x + 3)(x + 6)$

(3) $x^2 - y^2 + 12y - 36$

$= (x - y + 6)(x + y - 6)$

(4) $(x + y)^2 - 5(x + y) + 4$

$= (x + y - 4)(x + y - 1)$

(5) $(x + y)^2 + 9(x + y) + 20$

$= (x + y + 4)(x + y + 5)$

(6) $15x^2 + 85x + 50$

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

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

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

(8) $x^2 + 3xy + 2y^2 - 9x - 13y + 20$

$= (x + y - 4)(x + 2y - 5)$

(9) $(x + y)^2 - 9(x + y) + 18$

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

(10) $18x^2 - 54x + 28$

$= 2(3x - 7)(3x - 2)$

(11) $x^4 - 37x^2 + 36$

$= (x - 6)(x - 1)(x + 1)(x + 6)$

(12) $(x + y)^2 + 5(x + y) - 14$

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

(13) $15x^2 - 10x - 105$

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

(14) $x^2 + 4xy + 3y^2 + x - 5y - 12$

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

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

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

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

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

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

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

(18) $x^4 - 41x^2 + 400$

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

(19) $4x^2 - 4x - 80$

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

(20) $x^4 - 26x^2 + 25$

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

因数分解 発展（20問）　版Qの答え

※ 答えの中に、まだ分解できる因数が残っていないかを確かめてください。

---

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

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

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

(4) $16x^2 + 16x - 140$
$= 4(2x - 5)(2x + 7)$

(5) $(x + y)^2 + 10(x + y) + 21$
$= (x + y + 3)(x + y + 7)$

(6) $(x + y)^2 + 7(x + y) + 6$
$= (x + y + 1)(x + y + 6)$

(7) $x^2 - y^2 + 8y - 16$
$= (x - y + 4)(x + y - 4)$

(8) $20x^2 + 60x - 35$
$= 5(2x - 1)(2x + 7)$

(9) $x^4 - 13x^2 + 36$
$= (x - 3)(x - 2)(x + 2)(x + 3)$

(10) $x^2 - 9y^2 + 7x + 3y + 12$
$= (x - 3y + 4)(x + 3y + 3)$

(11) $x^2 - xy - 6y^2 - 7x - 4y + 10$
$= (x - 3y - 5)(x + 2y - 2)$

(12) $x^2 - xy - 2y^2 + 5x - 7y + 4$
$= (x - 2y + 1)(x + y + 4)$

(13) $(x + y)^2 - 5(x + y) - 14$
$= (x + y - 7)(x + y + 2)$

(14) $(x + y)^2 - 13(x + y) + 42$
$= (x + y - 7)(x + y - 6)$

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

(16) $12x^2 - 26x + 12$
$= 2(2x - 3)(3x - 2)$

(17) $x^4 - 10x^2 + 9$
$= (x - 3)(x - 1)(x + 1)(x + 3)$

(18) $4x^2 + 18x - 70$
$= 2(x + 7)(2x - 5)$

(19) $x^4 - 10x^2 - 96$
$= (x - 4)(x + 4)(x^2 + 6)$

(20) $x^2 + 3xy + 2y^2 + x + 4y - 6$
$= (x + y + 3)(x + 2y - 2)$