

Factoring Note

Common

1) $12x^2y - 6xy^2 - 3xy$

Answers:

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

2) $4x^7 + 8x^6 - 12x^9$

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

3) $3t(a+b) + 7(a+b)$

$= (a+b)(3t+7)$

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

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

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

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

Grouping

6) $ax + 3b + 3a + bx$

$= (x+3)(a+b)$

7) $2 + x^3 - 2x^2 - x$

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

8) $cx^2 + d - dx^2 - cx$

$= x(c-d)(x-1)$

Trinomials

9) $w^2 - 14w + 40$

$= (w-10)(w+4)$

10) $x^2 + 3xy - 70y^2$

$= (x+10y)(x-7y)$

11) $p^4 - 4p^2 - 21$

$= (p^2 - 7)(p^2 + 3)$

12) $3x^2 + 11x + 10$

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

13) $10x^2 + x - 2$

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

14) $8x^2 + 6x - 9$

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

15) $12x^2 - 2x - 30$

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

16) $9m^2 + 33m + 30$

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

Difference of Squares

17) $49x^4y^2 - 4z^2$

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

18) $36x^6 - 25y^4$

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

19) $49 - (2y-1)^2$

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

20) $x^2 + 6xy + 9y^2 - 36$

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