

Adding and Subtracting Polynomials

- $3(x-2) + (x-1) = 3x - 2 + x - 1 = 4x - 3$
- $5(2x-1) + 3(x+3) = 10x - 5 + 3x + 3 = 13x - 2$
- $2(3x+5) - 4(2x+1) = 6x + 10 - 8x - 4 = -2x + 6$
- $4(3-x) + 3(2x+1) = 12 - 4x + 6x + 3 = 15 + 2x$
- $2(x+y) - 3(x+2y) = 2x + 2y - 3x - 6y = -x - 4y$
- $-2(x-5) + 3(x-1) = -2x + 10 + 3x - 3 = x + 7$
- $3(2x+3) - 2(4x+1) = 6x + 9 - 8x - 2 = -2x + 7$
- $2(x-1) + 3(x+2) + 4(x+3) = 2x - 2 + 3x + 6 + 4x + 12 = 9x + 16$
- $-3(3-2x) - 6(2-x) = -9 + 6x - 12 + 6x = -21 + 12x$
- $-[2 - 3(x-4)] = -[2 - 3x + 12] = -[14 - 3x] = -14 + 3x$
- $-2[2(x+3) - 4(1-x)] = -2[2x + 6 - 4 + 4x] = -2[6x + 2] = -12x - 4$
- $4 + [3 - 5(2x+3) - 6x] = 4 + [3 - 10x - 15 - 6x] = 4 + [-12 - 16x] = 4 - 12 - 16x = -8 - 16x$
- $-3 - [2 + 3(4 - 3x) - 5(x+1)] = -3 - [2 + 12 - 9x - 5x - 5] = -3 - [9 - 14x] = -3 - 9 + 14x = -12 + 14x$
- $3x - 5y + 4x - 7y - 9x + y = -2x - 11y$
- $-4(2x + 3y - 5) + 2(x - 3y + 2) = -8x - 12y + 20 + 2x - 6y + 4 = -6x - 18y + 24$
- $3x^2 + 4x - 5 - 7x^2 + 6x - 2 = -4x^2 + 10x - 7$

$$17. -4y^3 + 7y - 8 + 2y^2 + 3y - 11 = -4y^3 + 2y^2 + 10y - 19$$

$$18. -2(3y^2 + 5y - 2) + 3(2y^2 + y - 6) = -6y^2 - 10y + 4 + 6y^2 + 3y - 18 = -7y - 14$$

$$19. (3xy + 7y - 2x) - (9xy - 4y + 5x) = 3xy + 7y - 2x - 9xy + 4y - 5x = -6xy + 11y - 7x$$

$$20. (x^4 - 7x^2 + x - 4) - (-2x^4 + 5x^2 + 3) = x^4 - 7x^2 + x - 4 + 2x^4 - 5x^2 - 3 = 3x^4 - 5x^2 + x - 7$$

$$21. \begin{aligned} (3xy + 4x^2y - 2xy^2) - (5xy - 2x^2y + 4xy^2) &= 3xy + 4x^2y - 2xy^2 - 5xy + 2x^2y - 4xy^2 = \\ &= -2xy + 6x^2y - 6xy^2 \end{aligned}$$

$$22. -3(x^3 + 2x^2 + 5x) - 5(x^3 - 3x^2 + 2x) = -3x^3 - 6x^2 - 15x - 5x^3 + 15x^2 - 10x = -8x^3 + 9x^2 - 25x$$

$$23. -5(-3x - 6) - 2(-4x - 3) = 15x + 30 + 8x + 6 = 23x + 36$$

$$24. 5x + 6y - 3(4x + 2y - 7) - 2y + x = 5x + 6y - 12x - 6y + 21 - 2y + x = -6x - 2y + 21$$

$$25. -(3x^2 + 2x - 5) + 9(-2x^2 + 2x - 3) = -3x^2 - 2x + 5 - 18x^2 + 18x - 27 = -21x^2 + 16x - 22$$

$$26. \begin{aligned} -4(3x^3 + 4x^2 - 5x + 6) - 2(2x^2 - x + 3) &= -12x^3 - 16x^2 + 20x - 24 - 4x^2 + 2x - 6 = \\ &= -12x^3 - 20x^2 + 22x - 30 \end{aligned}$$

$$27. -2(3x - 5y + 2z) - 3(-x - 2y + 3z) = -6x + 10y - 4z + 3x + 6y - 9z = -3x + 16y - 13z$$

$$28. \begin{aligned} (3x + 2z - 4y) - 2(-4x + y - 3z) + 4x - 2y + z &= 3x + 2z - 4y + 8x - 2y + 6z + 4x - 2y + z = \\ &= 15x - 8y + 9z \end{aligned}$$

$$29. 3x^2y^4 - 5x^4y^2 + 7x^2y^4 + 6x^4y^2 = 10x^2y^4 + x^4y^2$$

$$30. (2x^2 - 5) - 2(3x + 4) + 3(-4x^2 - x) = 2x^2 - 5 - 6x - 8 - 12x^2 - 3x = -10x^2 - 9x - 13$$

$$31. (x^2 + x - 3) - (2x^2 + 3x - 4) + (3x^2 - 4x + 1) = x^2 + x - 3 - 2x^2 - 3x + 4 + 3x^2 - 4x + 1 = 2x^2 - 6x + 2$$

$$32. (6 - 2y + 3y^2) - (8 + 4y - 2y^2) = 6 - 2y + 3y^2 - 8 - 4y + 2y^2 = 5y^2 - 6y - 2$$

$$33. -[-2x + 3(4x - 1) - 5(2x + 3)] = -[-2x + 12x - 3 - 10x - 15] = -[-18] = 18$$

$$34. \begin{aligned} -2[3(2x - 1) + 3(5 - 3x)] + 2(-4x + 1) &= -2[6x - 3 + 15 - 9x] - 8x + 2 = \\ -2[-3x + 12] - 8x + 2 &= 6x - 24 - 8x + 2 = -2x - 22 \end{aligned}$$