

Add, subtract, or multiply the given polynomials. Write polynomial answers in standard form.

1. $(x^2 + 3x) + (x^2 - 4x + 9)$

$$\boxed{2x^2 - x + 9}$$

2. $(4x^2 - 11x + 10) + (5x - 31)$

$$\boxed{4x^2 - 6x - 21}$$

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

$$\cancel{x^2 - 6x + 5} - \cancel{x^2 + x - 2}$$

$$\boxed{-7x + 7}$$

4. $(7x^3 - 1) - (15x^3 + 4x^2 - x + 3)$

$$7x^3 - 1 - 15x^3 - 4x^2 + x - 3$$

$$\boxed{-8x^3 - 4x^2 + x - 4}$$

5. $(2x + 1) - (3x + 1) + (x + 4)$

$$2x + 1 - 3x - 1 + x + 4$$

$$\boxed{4}$$

6. $(10x - 3 + 7x^2) + (x^3 - 2x + 17)$

$$10x - 3 + 7x^2 + x^3 - 2x + 17$$

$$\boxed{x^3 + 7x^2 + 8x + 14}$$

7. $-4x(x^2 + 6x - 7)$

$$\boxed{-4x^3 - 24x^2 + 28x}$$

8. $(3x - 4)(2x - 7)$

$$6x^2 - 21x - 8x + 28$$

$$\boxed{6x^2 - 29x + 28}$$

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

$$12x^3 - 36x^2 + 6x + 4x^2 - 12x + 2$$

$$\boxed{12x^3 - 32x^2 - 6x + 2}$$

10. $(x - 1)(x^3 + 2x^2 + 2)$

$$x^4 + 2x^3 + 2x - x^3 - 2x^2 - 2$$

$$\boxed{x^4 + x^3 - 2x^2 + 2x - 2}$$

11. $(x + 1)(5x^3 - x^2 + x - 4)$

$$5x^4 - x^3 + x^2 - 4x + 5x^3 - x^2 + x - 4$$

$$\boxed{5x^4 + 4x^3 - 3x - 4}$$

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

$$x^4 + 4x^3 + 2x^2 - x^3 - 4x^2 - 2x - 3x^2 - 12x - 6$$

$$\boxed{x^4 + 3x^3 - 5x^2 - 14x - 6}$$

13. $(x + 9)(x - 2)(x - 7)$

$$(x + 9)(x^2 - 9x + 14)$$

$$x^3 - 9x^2 + 14x + 9x^2 - 81x + 126$$

$$\boxed{x^3 - 67x + 126}$$

14. $(2x - 3)(x + 7)(x + 6)$

$$(2x - 3)(x^2 + 13x + 42)$$

$$2x^3 + 26x^2 + 84x - 3x^2 - 39x - 126$$

$$\boxed{2x^3 + 23x^2 + 45x - 126}$$