Name _____ Date _____

3.2 Practice B

In Exercises 1 and 2, find the sum.

1. $\left(8x^7 - 6x^5 + 4x^3 - 6x\right) + \left(15x^6 + 4x^5 - 3x^3 + 2\right)$

2. $\left(8x^4 - 2x^3 + 9x^2 + 7x + 14\right) + \left(6x^4 - 5x^3 - 9x^2 - 11x - 9\right)$

In Exercises 3 and 4, find the difference.

3. $\left(9x^5 + 5x^4 - 9x^2 + 10x\right) - \left(12x^5 + 2x^4 - x^2 - 9\right)$

4. $\left(12x^4 - 6x^2 + 2x + 14\right) - \left(3x^4 - 5x^3 + 9x + 3\right)$

In Exercises 5–8, find the product.

5. $\left(x^2 - 7x - 2\right)\left(x^2 - 3x - 6\right)$

6. $\left(2x^2 + 3x - 1\right)\left(-5x^2 - 2x + 4\right)$

7. $\left(4x^2 - 3x + 6\right)\left(x^2 - 2x + 2\right)$

8. $\left(3x^2 - 6x - 5\right)\left(x^4 + 2x^2 + 5x\right)$

9. Describe and correct the error in performing the operation.

$$\times \quad 4x^2\left(3x^4 - 2x^3 + 7\right) = 12x^8 - 8x^6 + 28x^2$$

In Exercises 10–13, find the product of the binomials.

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

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

12. $(2x - 1)(3 - 2x)(4x + 5)$

13. $(5 - 2x)(2 - x)(4x + 3)$

In Exercises 14–16, find the product.

14. $(3x + 5)(3x - 5)$

15. $(6t + 7)^2$

16. $(pq + 2)^2$

17. A rectangular pool has a level floor. The length of the pool is $(3x - 1)$ feet, the width of the pool is $(x + 6)$ feet, and the depth of the pool is $(x + 6)$ feet.

    a. Write an expression for the volume of the pool as a product of binomials.

    b. Write an expression for the volume of the pool as a polynomial in standard form.

18. Use Pascal's Triangle to expand $(2m - 5)^5$.

19. Use the Binomial Theorem to write the binomial expansion of $(3s + t)^3$.