

Do problems 1-21 odd. The answers are on the last page.

Practice

Add the polynomials.

1. $(4x^2 + 4x + 1) + (4x + 20)$

2. $(-7x^2 + 9x - 15) + (8x - 8)$

3. $(5x^3 - 6x + 10) + (x^3 + 10x - 9)$

4. $(3x^2 + 3x - 9) + (5x^2 + 7x^3 - 4)$

5. $(8x^2 + 4x + 1) + (5x^2 + 4x + 16)$

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

7. $(-12x^3 - 8x^2 - 7) + (6x^3 + 9x^2 - x)$

8. $(2x^3 - 7x^2 + 16) + (6x^3 + 5x^2 - 1)$

9. $(9x^2 - 7x + 55) + (3x + 8)$

10. $(7x^3 + 4x + 1) + (4x^2 + 20x^5)$

Subtract the polynomials.

11. $(6x^2 + 4x + 1) - (4x + 20)$

12. $(-7x^9 + 12x^6 - 12) - (5x^9 + 4x^6 - 9)$

13. $(8x^3 - 6x + 10) - (x^3 + 10x - 9)$

14. $(4x^8 + 3x - 34) - (5x^8 + 70x - 42)$

15. $(-9x^2 + 44x + 2) - (7x^2 + 10x + 99)$

16. $(-8x^2 + 15x + 28) - (-x^2 + 44x + 9)$

17. $(-16x^3 - 12x^2) - (6x^3 - 11x^2 - x)$

18. $(4x^6 - 9x^7 + 16) - (5x^6 + 25x^7 - 10)$

19. $(9x^2 - 7x + 65) - (11x + 8x^2)$

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

Challenge Problems

21. Simplify $(xy^2 + 4x + 2y^2) + (4xy + 7x^2 - 10y^2) - (3y^2 - 3x^2 - 3xy)$

22. Simplify $(y^2 + 10xy^2 - 9x + 11x^2) - (8x^2 - 55xy - 4y^2) + (-8y^2 - 11x^2 - 9xy)$

23. Simplify $(-0.9x^2 + 0.12xy - 7.2y^2) - (-3.1x^2 - 0.14xy + 6.5y^2)$

24. A four-sided polygon has sides that measure $(2x + 1)$, $(4x - 10)$, $(3x^2 - x + 1)$ and $(6x^2 - 50x + 25)$. What is the perimeter of the polygon, in terms of x ?

25. Correct the Error

There is an error in the student work below.

$$\begin{aligned}(4x^3 + 4x^2 - 8x) - (8x^2 - 16x + 4) &= \\= 4x^3 + 4x^2 - 8x - 8x^2 - 16x - 4 &= \\= 4x^3 + 12x^2 - 24x - 4 &= \end{aligned}$$

What is the error?

Answer Key

1. $4x^2 + 8x + 21$

2. $-7x^2 + 17x - 23$

3. $6x^3 + 4x + 1$

4. $7x^3 + 8x^2 + 3x - 13$

5. $13x^2 + 8x + 17$

6. $-2x^2 + 11x + 18$

7. $-6x^3 + x^2 - x - 7$

8. $8x^3 - 2x^2 + 15$

9. $9x^2 - 4x + 63$

10. $20x^5 + 7x^3 + 4x^2 + 4x + 1$

11. $6x^2 - 19$

12. $-12x^9 + 8x^6 - 3$

13. $7x^3 - 16x + 19$

14. $-x^8 - 67x + 8$

15. $-16x^2 + 34x - 97$

16. $-7x^2 - 29x + 19$

17. $-22x^3 - x^2 + x$

18. $-x^6 - 34x^7 + 26$

19. $x^2 - 18x + 65$

20. $7x^5 - 9x^3 + 4x + 1$

21. $7xy + xy^2 + 4x - 11y^2 + 10x^2$

22. $-3y^2 + 10xy^2 - 9x - 8x^2 + 46xy$

23. $2.2x^2 + 0.26xy - 13.7y^2$

24. $9x^2 - 45x + 17$

25. The student did not change the sign of $-16x$ before combining like terms.