

Practice 9-1 through 9-3

Write each polynomial in standard form. Then name each polynomial based on its degree and number of terms.

1. $4y^3 - 4y^2 + 3 - y$

2. $x^2 + x^4 - 6$

3. $x + 2$

4. $5 + 3x$

5. $7 - 8a^2 + 6a$

6. $5x + 4 - x^2$

Simplify. Write each answer in standard form.

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

8. $(2x^3 - 4x^2 + 3) + (x^3 - 3x^2 + 1)$

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

10. $(5n^2 - 7) - (2n^2 + n - 3)$

11. $(4x^2 + 13x + 9) + (12x^2 + x + 6)$

12. $(2x - 13x^2 + 3) - (2x^2 + 8x)$

Simplify each product.

13. $4(a - 3)$

14. $-5(x - 2)$

15. $-3x^2(x^2 + 3x)$

16. $-x^2(-2x^2 + 3x - 2)$

17. $4d^2(d^2 - 3d - 7)$

18. $5m^3(m + 6)$

Find the GCF of the terms of each polynomial.

19. $8x - 4$

20. $15x + 45x^2$

21. $x^2 + 3x$

22. $14x^3 + 7x^2$

23. $8x^3 - 12x$

24. $9 - 27x^3$

Factor each polynomial.

25. $8x + 10$

26. $12n^3 - 8n$

27. $14d - 2$

28. $x^3 - 5x^2$

29. $8x^3 - 12x^2 + 4x$

30. $7x^3 + 21x^4$

31. $18c^4 - 9c^2 + 7c$

32. $6y^4 + 9y^3 - 27y^2 + 3y$

33. $16m^4 - 8m^3 + 12m^2 - 20m$

Simplify each product. Write in standard form.

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

35. $(x^2 + x - 1)(x + 1)$

36. $(3w + 4)(2w - 1)$

37. $(x + 6)(x^2 - 4x + 3)$

38. $(5x - 3)(4x + 2)$

39. $(3y + 7)(4y + 5)$

40. $(x - 2)(x^2 + 4x + 4)$

41. $(2r + 1)(3r - 1)$

42. $(k + 4)(3k - 4)$

43. $(2x + 1)(4x + 3)$

44. $(3x + 4)(3x - 4)$

45. $(6x - 5)(3x + 1)$