

**Practice C**

For use with pages 576–582

Identify the leading coefficient, and classify the polynomial by degree and by number of terms.

- |                |                    |                                |
|----------------|--------------------|--------------------------------|
| 1. $-4$        | 2. $3x - 1$        | 3. $-x^2 + 6x - 2$             |
| 4. $7x^3 - 5x$ | 5. $6 - 2x^3$      | 6. $x^3 - 5x + 2x^5 - x^4 - 7$ |
| 7. $6 + 3x^4$  | 8. $-x^2 + 6x - 2$ | 9. $3x - x^4 + 3x^3 - 5x^2$    |

Use a vertical format to add or subtract.

- |                                              |                                                   |
|----------------------------------------------|---------------------------------------------------|
| 10. $(2a^2 - 4a + 3) + (6a^2 + 4a - 3)$      | 11. $(-4x^3 - 7x + 5) + (-x^2 + 6x - 1)$          |
| 12. $(-2x^3 + 3x^2 + x + 2) - (x^2 - x + 4)$ | 13. $(9x - 2) + (2x^4 - 5x + 1)$                  |
| 14. $(7m^2 - 3m + 8) - (-3m^2 - 6m + 1)$     | 15. $(-3 + 2n^2 + 5n^5) - (4 - n^3 + 2n^2 + n^5)$ |

Use a horizontal format to add or subtract.

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|------------------------------------------|---------------------------------------------|
| 16. $(5x^2 + 2x - 1) + 8x^2$             | 17. $(5n^2 + 9) - (n^2 - 8n - 5)$           |
| 18. $(n^2 - 6n) + (-2n^2 + 5n + 2)$      | 19. $(5t^3 - 2t^2 + t) - (-4t^3 + t^2 + 3)$ |
| 20. $(7x^2 + x^3 + 9) + (4x^2 + 2 - 5x)$ | 21. $(6x - 3x^2 + 1) - (9x - 4 - 3x^2)$     |

Use a vertical format or a horizontal format to add or subtract.

- |                                             |                                                |
|---------------------------------------------|------------------------------------------------|
| 22. $(3n^3 - 5n) - (2n^2 - 4n + 7)$         | 23. $(x^3 + 4x) - (2x - x^2)$                  |
| 24. $(3m + m^3 - 2m^5) + (7m^3 + m^5 - 1)$  | 25. $(x^2 + 1) + (x^2 - 1) - (x^2 + 1)$        |
| 26. $(6x - 5) - (8x + 15) + (3x - 4)$       | 27. $(2x^2 + 1) + (x^2 - 2x + 1) - (2x^2 + 8)$ |
| 28. $-(x^3 - 2) + (4x^3 - 2x) - (2x^2 + 3)$ | 29. $-(5n^2 - 1) - (-3n^2 + 5) - (n^2 - n)$    |
| 30. $2(t^2 + 5) - 3(t^2 + 5) + 5(t^2 + 5)$  | 31. $-10(u + 1) + 8(u - 1) - 3(u + 6)$         |

32. **Retail Sales** For 1990 through 2000, the total sales (in billions) for retail stores  $R$  and for durable-goods stores  $D$  can be modeled by

$$R = -0.21t^2 + 31.6t + 357.4$$

$$D = 0.26t^2 + 2.9t + 343$$

where  $t$  is the number of years since 1990. Find a model for the sales of non-durable goods stores  $N$ . (*Hint:* Retail sales = durable goods sales + non-durable goods sales)

33. **Profit** For 1990 through 2000, the revenue  $R$  and cost  $C$  of producing a product can be modeled by

$$R = \frac{3}{4}t^2 + \frac{5}{3}t + 108$$

$$C = \frac{7}{12}t^2 + \frac{5}{6}t + 94$$

where  $t$  is the number of years since 1990. Find a model for the profit  $P$  earned from 1990 to 2000. (*Hint:* Profit = Revenue - Cost)