

Oral Exercises

State the greatest monomial factor of each polynomial.

1. $6a^2 - 9ab - 15b^2$

2. $18x - 8x^3$

3. $15r^3 + 20r^2s - 20rs^2$

4. $6ab + 9a^2b - 15a^3b$

5. $4(z - 4)^2 - 16$

6. $12x^2y - 36xy^2 + 27y^3$

Factor completely.

7. $10a^2 - 15ab^2$

8. $-4x + 6x^2$

9. $t^3 - 9t$

10. $y^4 + 6y^3 + 9y^2$

11. $p^3 - 2p^2q + pq^2$

12. $u^3v - uv^3$

Written Exercises

Factor completely.

A 1–6. The polynomials in Oral Exercises 1–6.

7. $5a^2 + 10ab + 5b^2$

9. $4m^3 - m$

11. $y^4 - 2y^2 - y^3$

13. $x^2 - xy - x + y$

15. $-41a + 10 + 21a^2$

17. $a^3 - 2a^2b + 3a^2 - 6ab$

19. $6u^2v - 11u^2v^2 - 10u^2v^3$

21. $k(k + 1)(k + 2) - 3k(k + 1)$

23. $2u^5 - 7u^3 - 4u$

25. $r^2 - 6r - 9s^2 + 9$

27. $u^2 - 4v^2 + 3u - 6v$

29. $p^2 - 1 - 4q^2 - 4q$

8. $6c^2 + 18cd + 12d^2$

10. $3xy^2 - 27x^3$

12. $-n^4 - 3n^2 - 2n^3$

14. $-m^2 + mn + 2m - 2n$

16. $80 - 120p + 45p^2$

18. $8p^3q - 18pq^3$

20. $180x^2y - 108xy^2 - 75x^3$

22. $n(n^2 - 1) + n(n - 1)$

24. $81a + 18a^3 + a^5$

26. $x^2 - 4y^2 - 4x + 4$

28. $a^2 - b^2 + ac - bc$

30. $x^2 - 2x - 4y^2 - 4y$

B 31. $100 + 4x^2 - 16y^2 - 40x$

33. $a^4 - b^4$

35. $2pq + 2pr + q^2 - r^2$

37. $(a + b)^2 - (a - c)^2$

39. $x^3 - x^2y - xy^2 + y^3$

41. $a(a + 2)(a - 3) - 8(a - 3)$

43. $16c^{16} - 16$

45. $a(a^2 - 9) - 2(a + 3)^2$

47. $9u^2 - 9v^2 - 36w^2 + 36vw$

32. $16x^2 + 16y - y^2 - 64$

34. $m^8 - n^8$

36. $8a^3 + 4a^2b - 2ab^2 - b^3$

38. $3x^5 + 15x^3 - 108x$

40. $4 - 4x^2 - 4y^2 + 8xy$

42. $x(x + 1)(x - 4) + 4(x + 1)$

44. $(u - v)^3 + v - u$

46. $(x - 2)(x^2 - 1) - 6x - 6$

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