

1. $z^2 + 10z - 39 = (z + 13)(z - 3)$
2. $k^2 + 24k + 144 = (k + 12)(k + 12)$
3. $x^2 - 225 = (x + 15)(x - 15)$
4. $x^2 - 17x + 60 = (x - 12)(x - 5)$
5. $y^2 + 20y + 100 = (y + 10)(y + 10)$
6. $b^2 - 10b + 25 = (b - 5)(b - 5)$
7. $x^2 + 15x + 56 = (x + 8)(x + 7)$
8. $36a^2 + 48a + 16 = 4(9a^2 + 12a + 4) = 4(3a + 2)(3a + 2)$
9. $25a^2 - 100 = 25(a^2 - 4) = 25(a + 2)(a - 2)$
10. $121x^2 - 225 = (11x + 15)(11x - 15)$
11. $y^2 - 8xy + 16x^2 = (y - 4x)(y - 4x)$
12. $x^2y - y^3 = y(x^2 - y^2) = y(x + y)(x - y)$
13. $12 - 3p^4 = 3(4 - p^4) = 3(2 + p^2)(2 - p^2)$
14. $8m^2 - 18n^2 = 2(4m^2 - 9n^2) = 2(2m + 3n)(2m - 3n)$
15. $m^2 + 6mn + 9n^2 = (m + 3n)(m + 3n)$
16. $25a^2 + 60ab + 36b^2 = (5a + 6b)(5a + 6b)$
17. $18g^3h - 2gh^3 = 2gh(9g^2 - h^2) = 2gh(3g + h)(3g - h)$
18. $a^2b + 15ab + 50b = b(a^2 + 15a + 50) = b(a + 10)(a + 5)$

19. $z^2 - 625 = (z + 25)(z - 25)$
20. $x^3 - 2x^2y + xy^2 = x(x^2 - 2xy + y^2) = x(x - y)(x - y)$
21. $2ac - 8ad + 7bc - 28bd = 2a(c - 4d) - 7b(c - 4d) = (c - 7b)(c - 4d)$
22. $1 - 4a^2b^2 = (1 + 2ab)(1 - 2ab)$
23. $25a^2 - 49 = (5a + 7)(5a - 7)$
24. $24pq^2 - 18p^2q = 6pq(4q - 3p)$
25. $12x^2 - 84x + 144 = 12(x^2 - 7x + 12) = 12(x - 3)(x - 4)$
26. $4a^2 + 48a - 340 = 4(a^2 + 12a - 85) = 4(a + 17)(a - 5)$
27. $a^2c - c = c(a^2 - 1) = c(a + 1)(a - 1)$
28. $x^2 + 2x - 8 = (x + 4)(x - 2)$
29. $9a^3b - 25ab^3 = ab(9a^2 - 25b^2) = ab(3a + 5b)(3a - 5b)$
30. $2y^2 + 10y - 100 = 2(y^2 + 5y - 50) = 2(y + 10)(y - 5)$
31. $a^2 + 32a + 255 = (a + 15)(a + 17)$
32. $9b^2 + 6ab^2 + a^2b^2 = b^2(a^2 + 6a + 9) = b^2(a + 3)(a + 3)$
33. $8x^2 - 8xy + 2y^2 = 2(4x^2 - 4xy + y^2) = 2(2x - y)(2x - y)$
34. $3a^2b^2 - 12a^2 = 3a^2(b^2 - 4) = 3a^2(b + 2)(b - 2)$
35. $3x^2 + 9x - 12 = 3(x^2 + 3x - 4) = 3(x + 4)(x - 1)$
36. $a^2b^2 + 10abc + 25c^2 = (ab + 5c)(ab + 5c)$
37. $4c^2d^2 + 4cde + e^2 = (2cd + e)(2cd + e)$
38. $2x^4 - 12x^2 - 54 = 2(x^4 - 6x^2 - 27) = 2(x^2 + 3)(x^2 - 9)$
 $= 2(x^2 + 3)(x + 3)(x - 3)$