

1. $2j^2 - 16j - 66 = 2(j + 3)(j - 11)$
2. $500m^2 - 100m + 5 = 5(100m^2 - 20m + 1) = 5(10m - 1)^2$
3. $2c^2 - 16c + 30 = 2(c^2 - 8c + 15) = 2(c - 5)(c - 3)$
4. $2p^2 - 18p - 44 = 2(p^2 - 9p - 22) = 2(p + 2)(p - 11)$
5. $72v^2 + 24v + 2 = 2(36v^2 + 12v + 1) = 2(6v + 1)^2$
6. $7f^2 - 175 = 7(f^2 - 25) = 7(f + 5)(f - 5)$
7. $10n^2 - 40n - 120 = 10(n^2 - 4n - 12) = 10(n - 6)(n + 2)$
8. $6x^2 - 30x - 84 = 6(x^2 - 5x - 14) = 6(x - 7)(x + 2)$
9. $8n^2 - 72 = 8(n^2 - 9) = 8(n + 3)(n - 3)$
10. $6x^2 - 66x + 144 = 6(x^2 - 11x + 24) = 6(x - 3)(x - 8)$
11. $2t^2 + 60t + 112 = 2(t^2 + 30t + 56) = 2(t + 2)(t + 28)$
12. $5f^2 + 15f - 20 = 5(f^2 + 3f - 4) = 5(f + 4)(f - 1)$
13. $4g^2 - 20g + 25 = (2g - 5)^2$
14. $10w^2 + 170w + 660 = 10(w^2 + 17w + 66) = 10(w + 6)(w + 11)$
15. $10j^2 + 90j + 140 = 10(j^2 + 9j + 14) = 10(j + 2)(j + 7)$
16. $7x^2 + 42x + 56 = 7(x^2 + 6x + 8) = 7(x + 2)(x + 4)$
17. $8x^2 - 160x + 800 = 8(x^2 - 20x + 100) = 8(x - 10)^2$
18. $10u^2 - 60u - 550 = 10(u^2 - 6u - 55) = 10(u + 5)(u - 11)$
19. $4m^2 - 100 = 4(m^2 - 25) = 4(m + 5)(m - 5)$
20. $2ac - 8ad + 7bc - 28bd = 2a(c - 4d) + 7b(c - 4d) = (2a + 7b)(c - 4d)$

21. $3j^2 + 24j + 48 = 3(j^2 + 8j + 16) = 3(j + 4)^2$
22. $2v^2 + 24v + 22 = 2(v^2 + 12v + 11) = 2(v + 11)(v + 1)$
23. $2y^2 - 16y - 66 = 2(y^2 - 8y - 33) = 2(y + 3)(y - 11)$
24. $x^4 - 3x^3 - 10x^2 = x^2(x^2 - 3x - 10) = x^2(x - 5)(x + 2)$
25. $2a^3b - 32ab = 2ab(a^2 - 16) = 2ab(a - 4)(a + 4)$
26. $a^4 - 2a^2b^2 + b^4 = (a^2 - b^2)(a^2 - b^2) = (a + b)(a + b)(a - b)(a - b)$
27. $2ax^2 - 2a - bx^2 + b = 2a(x^2 - 1) - b(x^2 - 1) = (2a - b)(x^2 - 1) = (2a - b)(x + 1)(x - 1)$
28. $5x^4y - 5x^2y = 5x^2y(x^2 - 1) = 5x^2y(x - 1)(x + 1)$
29. $u^2 + 4u - 77 = (u + 11)(u - 7)$
30. $x^4 + 8x^3 - 48x^2 = x^2(x^2 + 8x - 48) = x^2(x - 4)(x + 12)$
31. $2x^2 + 36x + 144 = 2(x^2 + 18x + 72) = 2(x + 6)(x + 12)$
32. $3z^5 - 18z^4 + 27z^3 = 3z^3(z^2 - 6z + 9) = 3z^3(z - 3)^2$
33. $25a^2 - 30ab + 9b^2 = (5a - 3b)^2$
34. $4a^6 - 64a^2 = 4a^2(a^4 - 16) = 4a^2(a^2 + 4)(a^2 - 4) = 4a^2(a^2 + 4)(a + 2)(a - 2)$
35. $30v^3 - 30v^2 - 900v = 30v(v^2 - v - 30) = 30v(v - 6)(v + 5)$
36. $v^4 - 2v^2 + 1 = (v^2 - 1)(v^2 - 1) = (v + 1)(v - 1)(v + 1)(v - 1)$
37. $n^4 - n^2 - 12 = (n^2 + 3)(n^2 - 4) = (n^2 + 3)(n + 2)(n - 2)$
38. $xy^3z - 3xy^2z - 40xyz = xyz(y^2 - 3yz - 40) = xyz(y - 8)(y + 5)$