

1. $2j^2 - 16j - 66 = 2(j^2 - 8j - 33) = 2(j + 3)(j - 11)$
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. $10n^2 - 40n - 120 = 10(n^2 - 4n - 12) = 10(n - 6)(n + 2)$
7. $6x^2 - 30x - 84 = 6(x^2 - 5x - 14) = 6(x - 7)(x + 2)$
8. $8n^2 - 72 = 8(n^2 - 9) = 8(n + 3)(n - 3)$
9. $6x^2 - 66x + 144 = 6(x^2 - 11x + 24) = 6(x - 3)(x - 8)$
10. $2t^2 + 60t + 112 = 2(t^2 + 30t + 56) = 2(t + 2)(t + 28)$
11. $5f^2 + 15f - 20 = 5(f^2 + 3f - 4) = 5(f + 4)(f - 1)$
12. $4g^2 - 20g + 25 = (2g - 5)^2$
13. $10j^2 + 90j + 140 = 10(j^2 + 9j + 14) = 10(j + 2)(j + 7)$
14. $7x^2 + 42x + 56 = 7(x^2 + 6x + 8) = 7(x + 2)(x + 4)$
15. $4m^2 - 100 = 4(m^2 - 25) = 4(m + 5)(m - 5)$
16. $3j^2 + 24j + 48 = 3(j^2 + 8j + 16) = 3(j + 4)^2$
17. $2v^2 + 24v + 22 = 2(v^2 + 12v + 11) = 2(v + 11)(v + 1)$
18. $2y^2 - 16y - 66 = 2(y^2 - 8y - 33) = 2(y + 3)(y - 11)$
19. $x^4 - 3x^3 - 10x^2 = x^2(x^2 - 3x - 10) = x^2(x - 5)(x + 2)$
20. $2a^3b - 32ab = 2ab(a^2 - 16) = 2ab(a - 4)(a + 4)$
21. $a^4 - 2a^2b^2 + b^4 = (a^2 - b^2)(a^2 - b^2) = (a + b)(a + b)(a - b)(a - b)$
22. $5x^4y - 5x^2y = 5x^2y(x^2 - 1) = 5x^2y(x - 1)(x + 1)$
23. $u^2 + 4u - 77 = (u + 11)(u - 7)$
24. $16x^5y - 16x^4y^2 + 4x^3y^3 = 4x^3y(4x^2 - 4xy + y^2) = 4x^3y(2x - y)^2$
25. $x^4 + 8x^3 - 48x^2 = x^2(x^2 + 8x - 48) = x^2(x - 4)(x + 12)$
26. $2x^2 + 36x + 144 = 2(x^2 + 18x + 72) = 2(x + 6)(x + 12)$
27. $3z^5 - 18z^4 + 27z^3 = 3z^3(z^2 - 6z + 9) = 3z^3(z - 3)^2$
28. $25a^2 - 30ab + 9b^2 = (5a - 3b)^2$
29. $4a^6 - 64a^2 = 4a^2(a^4 - 16) = 4a^2(a^2 + 4)(a^2 - 4) = 4a^2(a^2 + 4)(a + 2)(a - 2)$
30. $9r^5 - 24r^4 + 16r^3 = r^3(9r^2 - 24r + 16) = r^3(3r - 4)(3r - 4)$
31. $v^4 - 2v^2 + 1 = (v^2 - 1)(v^2 - 1) = (v + 1)(v - 1)(v + 1)(v - 1)$
32. $n^4 - n^2 - 12 = (n^2 + 3)(n^2 - 4) = (n^2 + 3)(n + 2)(n - 2)$