

1. $cm + cn + dm + dn = c(m + n) + d(m + n) = (m + n)(c + d)$
2. $sm + sn - tm - tn = s(m + n) - t(m + n) = (m + n)(s - t)$
3. $eu + ev + 25e + fu + fv + 25f = e(u + v + 25) + f(u + v + 25) = (u + v + 25)(e + f)$
4. $ag + ah - 20a - bg - bh + 20b = a(g + h - 20) - b(g + h - 20) = (g + h - 20)(a - b)$
5. $r^2 + 10r + 25 = (r + 5)^2$
6. $x^2 - 4x + 4 = (x - 2)^2$
7. $e^2 - 121 = (e + 11)(e - 11)$
8. $8p^2 + 16p + 8 = 8(p^2 + 2p + 1) = 8(p + 1)^2$
9. $9z^2 - 108z + 324 = 9(z^2 - 12z + 36) = 9(z - 6)^2$
10. $3u^2 - 27 = 3(u^2 - 9) = 3(u - 3)(u + 3)$
11. $100s^2 + 140st + 49t^2 = (10s + 7t)^2$
12. $64c^2 - 48cd + 9d^2 = (8c - 3d)^2$
13. $9x^2 - 4y^2 = (3x + 2y)(3x - 2y)$
14. $v^2 + 11v + 24 = (v + 3)(v + 8)$
15. $e^2 + 4e - 21 = (e + 7)(e - 3)$
16. $u^2 - 15u + 54 = (u - 9)(u - 6)$
17. $e^3 + 3e^2 + 2e = e(e^2 + 3e + 2) = e(e + 2)(e + 1)$
18. $c^4 - d^4 = (c^2 - d^2)(c^2 + d^2) = (c - d)(c + d)(c^2 + d^2)$
19. $n^4 - 16 = (n^2 - 4)(n^2 + 4) = (n - 2)(n + 2)(n^2 + 4)$
20. $x^2 + 2xy + y^2 - z^2 = (x + y)^2 - z^2 = (x + y - z)(x + y + z)$
21. $4u^2 - 4uv + v^2 - 49w^2 = (2u - v)^2 - 49w^2 = (2u - v - 7w)(2u - v + 7w)$