

5) Use one or multiple methods for factorization in order to receive as many factors as possible:

a)  $2c^2 - 18d^2 = 2(c^2 - 9d^2) = 2(c + 3d)(c - 3d)$

b)  $3x^2y - 15xy + 12y = 3y(x^2 - 5x + 4) = 3y(x - 1)(x - 4)$

c)  $2w^3 - 20w^2 + 50w = 2w(w^2 - 10w + 25) = 2w(w - 5)^2$

d)  $3(t - 2) + (t^2 - 4) = 3 \cdot (t - 2) + (t + 2) \cdot (t - 2) = (3 + (t + 2)) \cdot (t - 2) = (t + 5)(t - 2)$

e)  $p^4 - 81 = (p^2 + 9)(p^2 - 9) = (p^2 + 9)(p + 3)(p - 3)$

f)  $4ax^2 - a(4x - 1) = a(4x^2 - (4x - 1)) = a(4x^2 - 4x + 1) = a(2x - 1)^2$