Exercise 2K

Question 15:

$(x + y - z)(x^2 + y^2 + z^2 - xy + yz + zx)$

$= [x + y + (-z)][(x)^2 + (y)^2 + (-z)^2 - (x)(y) - (y)(-z) - (-z)(x)]$

$= x^3 + y^3 - z^3 + 3xyz.$

Question 16:

$(x - 2y + 3)(x^2 + 4y^2 + 2xy - 3x + 6y + 9)$

$= [x + (-2y) + 3][(x)^2 + (-2y)^2 + (3) - (x)(-2y) - (-2y)(3) - (3)(x)]$

$= (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$

$= a^3 + b^3 + c^3 - 3abc$

Where, $x = a$, $(-2y) = b$ and $3 = c$

$(x - 2y + 3)(x^2 + 4y^2 + 2xy - 3x + 6y + 9)$

$= (x)^3 + (-2y)^3 + (3)^2 - 3(x)(-2y)(3)$

$= x^3 - 8y^3 + 27 + 18xy.$

Question 17:

$(x - 2y - z)(x^2 + 4y^2 + z^2 + 2xy + zx - 2yz)$

$= [x + (-2y) + (-z)][(x)^2 + (-2y)^2 + (-z)^2 - (x)(-2y) - (-2y)(-z) - (-z)(x)]$

$= (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$

$= a^3 + b^3 + c^3 - 3abc$

Where $x = a$, $(-2y) = b$ and $(-z) = c$

$(x - 2y - z)(x^2 + 4y^2 + z^2 + 2xy + zx - 2yz)$

$= (x)^3 + (-2y)^3 + (-z)^3 - 3(x)(-2y)(-z)$

$= x^3 - 8y^3 - z^3 - 6xyz.$

********** END **********