



Exercise 2H

Question 4:

$$\begin{aligned} & 9x^2 + 16y^2 + 4z^2 - 24xy + 16yz - 12xz \\ &= (-3x)^2 + (4y)^2 + (2z)^2 + 2(-3x)(4y) + 2(4y)(2z) + 2(2z)(-3x) \\ &= (-3x + 4y + 2z)^2. \end{aligned}$$

Question 5:

$$\begin{aligned} & 25x^2 + 4y^2 + 9z^2 - 20xy - 12yz + 30xz \\ &= (5x)^2 + (-2y)^2 + (3z)^2 + 2(5x)(-2y) + 2(-2y)(3z) + 2(3z)(5x) \\ &= (5x - 2y + 3z)^2 \end{aligned}$$

Question 6:

$$\begin{aligned} & \text{(i) } (99)^2 \\ &= (100 - 1)^2 \\ &[\text{Since } (a - b)^2 = a^2 + b^2 - 2ab] \\ &= (100)^2 - 2(100)(1) + (1)^2 \\ &= 10000 - 200 + 1 \\ &= 9801. \\ & \text{(ii) } (998)^2 \\ &= (1000 - 2)^2 \\ &= (1000)^2 - 2(1000)(2) + (2)^2 \\ &= 1000000 - 4000 + 4 \\ &= 996004. \end{aligned}$$

***** END *****