



Factorizations Ex 7.4 Q6

**Answer :**

$$\begin{aligned}x^2 + xy + xz + yz \\&= (x^2 + xy) + (xz + yz) \quad [\text{Grouping the expressions}] \\&= x(x + y) + z(x + y) \\&= (x + z)(x + y) \quad [\text{Taking } (x + y) \text{ as the common factor}] \\&= (x + y)(x + z)\end{aligned}$$

Factorizations Ex 7.4 Q7

**Answer :**

$$\begin{aligned}2ax + bx + 2ay + by \\&= (2ax + bx) + (2ay + by) \quad [\text{Grouping the expressions}] \\&= x(2a + b) + y(2a + b) \\&= (x + y)(2a + b) \quad [\text{Taking } (2a + b) \text{ as the common factor}]\end{aligned}$$

Factorizations Ex 7.4 Q8

**Answer :**

$$\begin{aligned}ab - by - ay + y^2 \\&= (ab - ay) + (y^2 - by) \quad [\text{Grouping the expressions}] \\&= a(b - y) + y(y - b) \\&= a(b - y) - y(b - y) \quad [\because (y - b) = -(b - y)] \\&= (a - y)(b - y) \quad [\text{Taking } (b - y) \text{ as the common factor}]\end{aligned}$$

Factorizations Ex 7.4 Q9

**Answer :**

$$\begin{aligned}axy + bcxy - az - bcz \\&= (axy + bcxy) - (az + bcz) \quad [\text{Grouping the expressions}] \\&= xy(a + bc) - z(a + bc) \\&= (xy - z)(a + bc) \quad [\text{Taking } (a + bc) \text{ as the common factor}]\end{aligned}$$

Factorizations Ex 7.4 Q10

**Answer :**

$$\begin{aligned}lm^2 - mn^2 - lm + n^2 &= (lm^2 - lm) + (n^2 - mn^2) \quad [\text{Regrouping the expressions}] \\&= lm(m - 1) + n^2(1 - m) \\&= lm(m - 1) - n^2(m - 1) \quad [\because (1 - m) = -(m - 1)] \\&= (lm - n^2)(m - 1) \\&[\text{Taking } (m - 1) \text{ as the common factor}]\end{aligned}$$

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