Factorizations Ex 7.4 Q1

Answer :

$$qr - pr + qs - ps$$
$$= (qr - pr) + (qs - ps) \quad [\textit{Grouping the expressions}]$$
$$= r(q - p) + s(q - p)$$
$$= (r + s)(q - p) \quad\quad [\textit{Taking } (q - p) \textit{ as the common factor}]$$

Factorizations Ex 7.4 Q2

Answer :

$$p^2q - pr^2 - pq + r^2$$
$$= (p^2q - pq) + (r^2 - pr^2) \quad [\textit{Grouping the expressions}]$$
$$= pq(p - 1) + r^2(1 - p)$$
$$= pq(p - 1) - r^2(p - 1) \quad [\because (1 - p) = -(p - 1)]$$
$$= (pq - r^2)(p - 1) \quad\quad [\textit{Taking } (p - 1) \textit{ as the common factor}]$$

Factorizations Ex 7.4 Q3

Answer :

$$1 + x + xy + x^2y$$
$$= (1 + x) + (xy + x^2y) \quad [\textit{Grouping the expressions}]$$
$$= (1 + x) + xy(1 + x)$$
$$= (1 + xy)(1 + x) \quad\quad [\textit{Taking } (1 + x) \textit{ as the common factor}]$$

Factorizations Ex 7.4 Q4

Answer :

$$ax + ay - bx - by$$
$$= (ax + ay) - (bx + by) \quad [\textit{Grouping the expressions}]$$
$$= a(x + y) - b(x + y)$$
$$= (a - b)(x + y) \quad\quad [\textit{Taking } (x + y) \textit{ as the common factor}]$$

Factorizations Ex 7.4 Q5

Answer :

$$xa^2 + xb^2 - ya^2 - yb^2$$
$$= (xa^2 + xb^2) - (ya^2 + yb^2) \quad [\textit{Grouping the expressions}]$$
$$= x(a^2 + b^2) - y(a^2 + b^2)$$
$$= (x - y)(a^2 + b^2) \quad\quad [\textit{Taking } (a^2 + b^2) \textit{ as the common factor}]$$

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