Factorizations Ex 7.4 Q21

Answer :

$$\begin{aligned} a(a+b-c)-bc &= a^2+ab-ac-bc \\ &= (a^2-ac)+(ab-bc) \quad [Regrouping\ the\ expressions] \\ &= a(a-c)+b(a-c) \\ &= (a+b)(a-c) \quad [Taking\ (a-c)\ as\ the\ common\ factor] \end{aligned}$$

Factorizations Ex 7.4 Q22

Answer :

$$\begin{aligned} x^2-11xy-x+11y &= (x^2-x)+(11y-11xy) \quad [Regrouping\ the\ expressions] \\ &= x(x-1)+11y(1-x) \\ &= x(x-1)-11y(x-1) \quad [\because (1-x)=-(x-1)] \\ &= (x-11y)(x-1) \quad [Taking\ out\ the\ common\ factor\ (x-1)] \end{aligned}$$

Factorizations Ex 7.4 Q23

Answer :

$$\begin{aligned} ab-a-b+1 &= (ab-b)+(1-a) \quad [Regrouping\ the\ expressions] \\ &= b(a-1)+(1-a) \\ &= b(a-1)-(a-1) \quad [\because (1-a)=-(a-1)] \\ &= (a-1)(b-1) \quad [Taking\ out\ the\ common\ factor\ (a-1)] \end{aligned}$$

Factorizations Ex 7.4 Q24

Answer :

$$\begin{aligned} x^2+y-xy-x &= (x^2-xy)+(y-x) \quad [Regrouping\ the\ expressions] \\ &= x(x-y)+(y-x) \\ &= x(x-y)-(x-y) \quad [\because (y-x)=-(x-y)] \\ &= (x-1)(x-y) \quad [Taking\ (x-y)\ as\ the\ common\ expression] \end{aligned}$$

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