



Factorizations Ex 7.5 Q31

Answer :

$$\begin{aligned}x^4 - 625 \\&= (x^2)^2 - 25^2 \\&= (x^2 + 25)(x^2 - 25) \\&= (x^2 + 25)(x^2 - 5^2) \\&= (x^2 + 25)(x + 5)(x - 5)\end{aligned}$$

Factorizations Ex 7.5 Q32

Answer :

$$\begin{aligned}x^4 - 1 \\&= (x^2)^2 - 1 \\&= (x^2 + 1)(x^2 - 1) \\&= (x^2 + 1)(x + 1)(x - 1)\end{aligned}$$

Factorizations Ex 7.5 Q33

Answer :

$$\begin{aligned} & 49(a-b)^2 - 25(a+b)^2 \\ &= [7(a-b)]^2 - [5(a+b)]^2 \\ &= [7(a-b) - 5(a+b)][7(a-b) + 5(a+b)] \\ &= (7a - 7b - 5a - 5b)(7a - 7b + 5a + 5b) \\ &= (2a - 12b)(12a - 2b) \\ &= 2(a - 6b)2(6a - b) \\ &= 4(a - 6b)(6a - b) \end{aligned}$$

Factorizations Ex 7.5 Q34

Answer :

$$\begin{aligned} & x - y - x^2 + y^2 \\ &= (x - y) + (y^2 - x^2) \quad [\text{Regrouping the terms}] \\ &= (x - y) + (y + x)(y - x) \\ &= (x - y) - (y + x)(x - y) \quad [\because (y - x) = -(x - y)] \\ &= (x - y)[1 - (y + x)] \\ &= (x - y)(1 - x - y) \end{aligned}$$

Factorizations Ex 7.5 Q35

Answer :

$$\begin{aligned} & 16(2x - 1)^2 - 25y^2 \\ &= [4(2x - 1)]^2 - (5y)^2 \\ &= [4(2x - 1) - 5y][4(2x - 1) + 5y] \\ &= (8x - 4 - 5y)(8x - 4 + 5y) \\ &= (8x - 5y - 4)(8x + 5y - 4) \end{aligned}$$

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