



Factorizations Ex 7.5 Q26

Answer :

$$\begin{aligned} & a^4 - (2b + c)^4 \\ &= (a^2)^2 - [(2b + c)^2]^2 \\ &= [a^2 + (2b + c)^2][a^2 - (2b + c)^2] \\ &= [a^2 + (2b + c)^2]\{[a + (2b + c)][a - (2b + c)]\} \\ &= [a^2 + (2b + c)^2](a + 2b + c)(a - 2b - c) \end{aligned}$$

Factorizations Ex 7.5 Q27

Answer :

$$\begin{aligned} & (3x + 4y)^4 - x^4 \\ &= [(3x + 4y)^2]^2 - (x^2)^2 \\ &= [(3x + 4y)^2 + x^2][(3x + 4y)^2 - x^2] \\ &= [(3x + 4y)^2 + x^2][(3x + 4y) + x][(3x + 4y) - x] \\ &= \{(3x + 4y)^2 + x^2\}(3x + 4y + x)(3x + 4y - x) \\ &= \{(3x + 4y)^2 + x^2\}(4x + 4y)(2x + 4y) \\ &= \{(3x + 4y)^2 + x^2\}4(x + y)2(x + 2y) \\ &= 8\{(3x + 4y)^2 + x^2\}(x + y)(x + 2y) \end{aligned}$$

Factorizations Ex 7.5 Q28

Answer :

$$\begin{aligned}p^2 q^2 - p^4 q^4 \\&= p^2 q^2 (1 - p^2 q^2) \\&= p^2 q^2 [1 - (pq)^2] \\&= p^2 q^2 (1 - pq) (1 + pq)\end{aligned}$$

Factorizations Ex 7.5 Q29

Answer :

$$\begin{aligned}3x^3 y - 243xy^3 \\&= 3xy(x^2 - 81y^2) \\&= 3xy[x^2 - (9y)^2] \\&= 3xy(x - 9y)(x + 9y)\end{aligned}$$

Factorizations Ex 7.5 Q30

Answer :

$$\begin{aligned}a^4 b^4 - 16c^4 \\&= \left[(a^2 b^2)^2 - (4c^2)^2 \right] \\&= (a^2 b^2 + 4c^2)(a^2 b^2 - 4c^2) \\&= (a^2 b^2 + 4c^2) \left[(ab)^2 - (2c)^2 \right] \\&= (a^2 b^2 + 4c^2)(ab + 2c)(ab - 2c)\end{aligned}$$

***** END *****

