



Factorizations Ex 7.6 Q11

Answer :

$$\begin{aligned} & a^2 + 4ab + 3b^2 \\ &= a^2 + 4ab + 4b^2 - b^2 \\ &= \left[a^2 + 2 \times a \times 2b + (2b)^2 \right] - b^2 \\ &= (a + 2b)^2 - b^2 \\ &= \left[(a + 2b) - b \right] \left[(a + 2b) + b \right] \\ &= (a + 2b - b)(a + 2b + b) \\ &= (a + b)(a + 3b) \end{aligned}$$

Factorizations Ex 7.6 Q12

Answer :

$$\begin{aligned} & 96 - 4x - x^2 \\ &= 100 - 4 - 4x - x^2 \\ &= 100 - (x^2 + 4x + 4) \\ &= 100 - (x^2 + 2 \times x \times 2 + 2^2) \\ &= 10^2 - (x + 2)^2 \\ &= [10 - (x + 2)][10 + (x + 2)] \\ &= (10 - x - 2)(10 + x + 2) \\ &= (8 - x)(12 + x) \\ &= (x + 12)(-x + 8) \end{aligned}$$

Factorizations Ex 7.6 Q13

Answer :

$$\begin{aligned} & a^4 + 3a^2 + 4 \\ &= a^4 + 4a^2 - a^2 + 4 \\ &= (a^4 + 4a^2 + 4) - a^2 \\ &= [(a^2)^2 + 2 \times a^2 \times 2 + 2^2] - a^2 \\ &= (a^2 + 2)^2 - a^2 \\ &= [(a^2 + 2) - a][(a^2 + 2) + a] \\ &= (a^2 - a + 2)((a^2 + a + 2)) \end{aligned}$$

Answer :

$$\begin{aligned}
& 4x^4 + 1 \\
&= 4x^4 + 4x^2 + 1 - 4x^2 \\
&= \left[(2x^2)^2 + 2 \times 2x^2 \times 1 + 1 \right] - 4x^2 \\
&= (2x^2 + 1)^2 - (2x)^2 \\
&= \left[(2x^2 + 1) - 2x \right] \left[(2x^2 + 1) + 2x \right] \\
&= (2x^2 - 2x + 1)(2x^2 + 2x + 1)
\end{aligned}$$

Answer :

$$\begin{aligned}
& 4x^4 + y^4 \\
&= 4x^4 + 4x^2y^2 + y^4 - 4x^2y^2 \\
&= \left[(2x^2)^2 + 2 \times 2x^2 \times y + (y^2)^2 \right] - (2xy)^2 \\
&= (2x^2 + y^2)^2 - (2xy)^2 \\
&= \left[(2x^2 + y^2) - 2xy \right] \left[(2x^2 + y^2) + 2xy \right] \\
&= (2x^2 - 2xy + y^2)(2x^2 + 2xy + y^2)
\end{aligned}$$

***** END *****