Factorizations Ex 7.5 Q11

Answer :

$$
\begin{aligned}
& x^8-1 \\
&=\left(x^4\right)^2-1^2 \\
&=\left(x^4-1\right)\left(x^4+1\right) \\
&=\left[\left(x^2\right)^2-1^2\right]\left(x^4+1\right) \\
&=\left(x^2-1\right)\left(x^2+1\right)\left(x^4+1\right) \\
&=\left(x^2-1^2\right)\left(x^2+1\right)\left(x^4+1\right) \\
&=(x-1)(x+1)\left(x^2+1\right)\left(x^4+1\right)
\end{aligned}
$$

Factorizations Ex 7.5 Q12

Answer :

$$
\begin{aligned}
& 64-(a+1)^2 \\
&=(8)^2-(a+1)^2 \\
&=[8-(a+1)][8+(a+1)] \\
&=(8-a-1)(8+a+1) \\
&=(7-a)(9+a)
\end{aligned}
$$

Factorizations Ex 7.5 Q13

Answer :

$$36l^2 - \left(m+n\right)^2$$
$$= \left(6l\right)^2 - \left(m+n\right)^2$$
$$= \left[6l - \left(m+n\right)\right]\left[6l + \left(m+n\right)\right]$$
$$= \left(6l - m - n\right)\left(6l + m + n\right)$$

Factorizations Ex 7.5 Q14

Answer :

$$25x^4y^4 - 1$$
$$= \left(5x^2y^2\right)^2 - 1$$
$$= \left(5x^2y^2 - 1\right)\left(5x^2y^2 + 1\right)$$

Factorizations Ex 7.5 Q15

Answer :

$a^4 - 1/b^4$

$= (a^2)^2 - 1/(b^2)^2$

$= a^2 - 1/b^2a^2 + 1/b^2$

$= a - 1/ba + 1/ba^2 + 1/b^2$

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