$$= 2x(x+5) - 9(x+5)$$
$$= (2x-9)(x+5)$$

Q33

Answer :

The given expression is $6p^2 + 11p - 10$.
Find two numbers that follow the conditions given below :
Sum $= 11$
Product $= 6 \times -10 = -60$
Clearly, the numbers are 15 *and* -4.

$$6p^2 + 11p - 10 = 6p^2 + 15p - 4p - 10$$
$$= 3p(2p+5) - 2(2p+5)$$
$$= (2p+5)(3p-2)$$

Q34

Answer :

The given expression is $2x^2 - 17x - 30$.
Find two numbers that follow the conditions given below :
Sum $= -17$
Product $= -30 \times 2 = -60$
Clearly, the numbers are -20 *and* 3.

$$2x^2 - 17x - 30 = 2x^2 - 20x + 3x - 30$$
$$= 2x(x-10) + 3(x-10)$$
$$= (2x+3)(x-10)$$

Q35

Answer :

The given expression is $7y^2 - 19y - 6$.
Find two numbers that follow the conditions given below :

Sum $= -19$
Product $= 7 \times -6 = -42$
Clearly, the numbers are -21 *and* 2.

$$\begin{aligned} 7y^2 - 19y - 6 &= 7y^2 - 21y + 2y - 6 \\ &= 7y(y - 3) + 2(y - 3) \\ &= (7y + 2)(y - 3) \end{aligned}$$

Q36

Answer :

The given expression is $28 - 31x - 5x^2$.
Find two numbers that follow the conditions given below :
Sum $= -31$
Product $= 28 \times -5 = -140$
Clearly, the numbers are -35 *and* 4.

$$\begin{aligned} 28 - 31x - 5x^2 &= 28 + 4x - 35x - 5x^2 \\ &= 4(x + 7) - 5x(7 + x) \\ &= (x + 7)\ (4 - 5x) \end{aligned}$$

Q37

Answer :

The given expression is $3 + 23z - 8z^2$.
Find two numbers that follow the conditions given below :
Sum $= 23$
Product $= 3 \times -8 = -24$
Clearly, the numbers are 24 *and* -1.

$$\begin{aligned} 3 + 23z - 8z^2 &= 3 + 24z - z - 8z^2 \\ &= 3(1 + 8z) - z(1 + 8z) \\ &= (1 + 8z)\ (3 - z) \end{aligned}$$

Q38

Answer :

The given expression is $6x^2 - 5x - 6$.

Find two numbers that follow the conditions given below :

Sum $= -5$

Product $= -6 \times 6 = -36$

Clearly, the numbers are -9 *and* 4.

$$\begin{aligned} 6x^2 - 5x - 6 &= 6x^2 - 9x + 4x - 6 \\ &= 3x(2x - 3) + 2(2x - 3) \\ &= (2x - 3)\ (3x + 2) \end{aligned}$$

Q39

Answer :

The given expression is $3m^2 + 24m + 36$.

Find two numbers that follow the conditions given below :

Sum $= 24$

Product $= 36 \times 3 = 108$

Clearly, the numbers are 18 *and* 6.

$$\begin{aligned} 3m^2 + 24m + 36 &= 3m^2 + 18m + 6m + 36 \\ &= 3m(m + 6) + 6(m + 6) \\ &= (3m + 6)\ (m + 6) = 3(m + 2)(m + 6) \end{aligned}$$

Q40

Answer :

The given expression is $4n^2 - 8n + 3$.

Find two numbers that follow the conditions given below :

Sum $= -8$

Product $= 4 \times 3 = 12$

Clearly, the numbers are -6 *and* -2.

$$\begin{aligned}4n^2-8n+3 &= 4n^2-2n-6n+3\\ &= 2n(2n-1)-3(2n-1)\\ &= (2n-1)\,(2n-3)\end{aligned}$$

Q41

Answer :

The given expression is $6x^2-17x-3$.

Find two numbers that follow the conditions given below :

Sum $=-17$

Product $=6\times-3=-18$

Clearly, the numbers are -18 *and* 1.

$$\begin{aligned}6x^2-17x-3 &= 6x^2-18x+x-3\\ &= 6x(x-3)+1(x-3)\\ &= (6x+1)\,(x-3)\end{aligned}$$

Q42

Answer :

The given expression is $7x^2-19x-6$.

Find two numbers that follow the conditions given below :

Sum $=-19$

Product $=7\times-6=-42$

Clearly, the numbers are -21 *and* 2.

$$\begin{aligned}7x^2-19x-6 &= 7x^2-21x+2x-6\\ &= 7x(x-3)+2(x-3)\\ &= (7x+2)\,(x-3)\end{aligned}$$

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