



Exercise 7B

Q1

Answer :

We have:

$$\begin{aligned}x^2 - 36 &= (x)^2 - (6)^2 \\&= (x + 6)(x - 6)\end{aligned}$$

$$\therefore x^2 - 36 = (x + 6)(x - 6)$$

Q2

Answer :

We have:

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

$$\therefore 4a^2 - 9 = (2a + 3)(2a - 3)$$

Q3

Answer :

We have:

$$\begin{aligned}81 - 49x^2 &= (9)^2 - (7x)^2 \\&= (9 + 7x)(9 - 7x)\end{aligned}$$

$$\therefore 81 - 49x^2 = (9 + 7x)(9 - 7x)$$

Q4

Answer :

We have:

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

$$\therefore 4x^2 - 9y^2 = (2x + 3y)(2x - 3y)$$

Q5

Answer :

We have:

$$\begin{aligned}16a^2 - 225b^2 &= (4a)^2 - (15b)^2 \\ &= (4a + 15b)(4a - 15b)\end{aligned}$$

$$\therefore 16a^2 - 225b^2 = (4a + 15b)(4a - 15b)$$

Q6

Answer :

We have:

$$\begin{aligned}9a^2b^2 - 25 &= (3ab)^2 - (5)^2 \\ &= (3ab + 5)(3ab - 5)\end{aligned}$$

$$\therefore 9a^2b^2 - 25 = (3ab + 5)(3ab - 5)$$

Q7

Answer :

We have:

$$\begin{aligned}16a^2 - 144 &= (4a)^2 - (12)^2 \\&= (4a + 12)(4a - 12) \\&= 4(a + 3) 4(a - 3) = 16(a + 3)(a - 3)\end{aligned}$$

$$\therefore 16a^2 - 144 = 16(a + 3)(a - 3)$$

Q8

Answer :

We have:

$$\begin{aligned}63a^2 - 112b^2 &= 7(9a^2 - 16b^2) \\&= 7\{(3a)^2 - (4b)^2\} \\&= 7(3a + 4b)(3a - 4b)\end{aligned}$$

$$\therefore 63a^2 - 112b^2 = 7(3a + 4b)(3a - 4b)$$

Q9

Answer :

We have:

$$\begin{aligned}20a^2 - 45b^2 &= 5(4a^2 - 9b^2) \\&= 5\{(2a)^2 - (3b)^2\} \\&= 5(2a + 3b)(2a - 3b)\end{aligned}$$

$$\therefore 20a^2 - 45b^2 = 5(2a + 3b)(2a - 3b)$$

Q10

Answer :

We have:

$$\begin{aligned} 12x^2 - 27 &= 3(4x^2 - 9) \\ &= 3\{(2x)^2 - (3)^2\} \\ &= 3(2x + 3)(2x - 3) \end{aligned}$$

$$\therefore 12x^2 - 27 = 3(2x + 3)(2x - 3)$$

Q11

Answer :

We have:

$$\begin{aligned} x^3 - 64x &= x(x^2 - 64) \\ &= x\{(x)^2 - (8)^2\} \\ &= x(x + 8)(x - 8) \end{aligned}$$

$$\therefore x^3 - 64x = x(x + 8)(x - 8)$$

Q12

Answer :

We have:

$$\begin{aligned} 16x^5 - 144x^3 &= 16x^3(x^2 - 9) \\ &= 16x^3\{(x)^2 - (3)^2\} \\ &= 16x^3(x + 3)(x - 3) \end{aligned}$$

$$\therefore 16x^5 - 144x^3 = 16x^3(x + 3)(x - 3)$$

Q13

Answer :

We have:

$$\begin{aligned} 3x^5 - 48x^3 &= 3x^3(x^2 - 16) \\ &= 3x^3\{(x)^2 - (4)^2\} \\ &= 3x^3(x + 4)(x - 4) \end{aligned}$$

$$\therefore 3x^5 - 48x^3 = 3x^3(x + 4)(x - 4)$$

Q14

Answer :

We have:

$$\begin{aligned} 16p^3 - 4p &= 4p(4p^2 - 1) \\ &= 4p\{(2p)^2 - (1)^2\} \\ &= 4p(2p + 1)(2p - 1) \end{aligned}$$

$$\therefore 16p^3 - 4p = 4p(2p + 1)(2p - 1)$$

Q15

Answer :

We have:

$$\begin{aligned} 63a^2b^2 - 7 &= 7(9a^2b^2 - 1) \\ &= 7\{(3ab)^2 - (1)^2\} \\ &= 7(3ab + 1)(3ab - 1) \end{aligned}$$

***** END *****