ICSE Class 9 Maths Selina Solutions Chapter 5 - Factorisation

ICSE Class 9 Maths Selina Solutions Chapter 5 are provided here which have been prepared by our PW experts. Get the details of the ICSE Class 9 Maths Selina Solutions Chapter 5 - Factorisation Overview in the below article.

ICSE Class 9 Maths Selina Solutions Chapter 5: Here we provide you with detailed ICSE Class 9 Maths Selina Solution Chapter 5 Factorization. Our PW Subject experts have prepared these questions according to the latest syllabus for ICSE Class 9 Maths exam. Selina's solutions are considered very useful for ICSE Class 9 Maths exam preparation. For better and more strategic preparation in the right direction, our blog serves as a guide for ICSE Class 9 Maths 2024 aspirants.

ICSE Class 9 Maths Selina Solutions Chapter 5

In mathematics, Factorization is writing a number or other mathematical object as the product of several factors, usually the product of smaller or simpler similar objects. For example, 3 × 5 is an integer factorization of 15 and is a polynomial factorization of $x^2 - 4$.

Selina's solutions are considered very useful for ICSE class 9 Maths Selina Solutions Chapter 5 preparation. Here we bring you with detailed answers and solutions for Selina Solutions for Class 9 Maths Chapter 5 - Factorization. Subject experts have prepared these questions as per the syllabus prescribed by CISCE for ICSE.

ICSE Class 9 Maths Selina Solutions Chapter 5 PDF

In our article we have provided the ICSE Class 9 Maths Selina Solution Chapter 5 PDF. Here you can find the ICSE Class 9 Maths Selina Solutions Chapter 5 PDF file that can be downloaded and viewed online as we have attached below the direct download link for easy and convenient access for the candidates. Students can use and download these Selina solutions for free to practice offline. Students are advised to prepare from these ICSE Class 9 Maths Selina Solutions Chapter 5 before the examinations to perform better.

ICSE Class 9 Maths Selina Solutions Chapter 5 PDF

ICSE Class 9 Maths Selina Solutions Chapter 5 Factorization

Here we have provided ICSE Class 9 Maths Selina Solutions Chapter 5 Factorization for the ease of students so that they can prepare better for their ICSE Class 9 Maths Exam.

Exercise 5(A)

Factorise by taking out the common factors:

1. 2(2x – 5y) (3x + 4y) – 6(2x – 5y) (x – y)

Solution:

Identifying and taking (2x – 5y) common from both the terms, we have

= (2x – 5y) [2(3x + 4y) – 6(x – y)]

= (2x – 5y) (6x + 8y – 6x + 6y)

= (2x – 5y) (8y + 6y)

= (2x – 5y) (14y)

= (2x – 5y)14y

2. xy(3x2 – 2y2) – yz(2y2 – 3x2) + zx(15x2 – 10y2)

Solution:

We have, xy(3x2 – 2y2) – yz(2y2 – 3x2) + zx(15x2 – 10y2)

Changing signs to arrive at a common term

So,

= xy(3x2 – 2y2) + yz(3x2 – 2y2) + zx(15x2 – 10y2)

= xy(3x2 – 2y2) + yz(3x2 – 2y2) + 5zx(3x2 – 2y2)

= (3x2 – 2y2) (xy + yz + 5zx)

3. ab(a2 + b2 – c2) – bc(c2 – a2 – b2) + ca(a2 + b2 – c2)

Solution:

We have, ab(a2 + b2 – c2) – bc(c2 – a2 – b2) + ca(a2 + b2 – c2)

Changing signs to arrive at a common term

So,

= ab(a2 + b2 – c2) + bc(a2 + b2 – c2) + ca(a2 + b2 – c2)

= (a2 + b2 – c2) (ab + bc + ca)

4. 2x(a – b) + 3y(5a – 5b) + 4z(2b – 2a)

Solution:

We have, 2x(a – b) + 3y(5a – 5b) + 4z(2b – 2a)

Taking common factors, we get

= 2x(a – b) + 15y(a – b) – 8z(a – b)

= (a – b) (2x + 15y – 8z)

Factorize by the grouping method:

5. a3 + a – 3a2 – 3

Solution:

We have, a3 + a – 3a2 – 3

Grouping to arrive at a common term

= a (a2 + 1) – 3(a2 + 1)

Taking common, we get

= (a2 + 1) (a -3)

6. 16(a + b)2 – 4a – 4b

Solution:

We have, 16 (a + b)2 – 4a – 4b

Grouping to arrive at a common term

= 16(a + b)2 – 4 (a + b)

Taking common, we get

= 4(a + b) [4 (a + b) – 1]

= 4(a + b) (4a + 4b – 1)

7. Factorize by the grouping method:

a4 – 2a3 – 4a + 8

Solution:

We have, a4 – 2a3 – 4a + 8

Grouping to arrive at a common term

= a3(a – 2) – 4(a – 2)

Taking common, we get

= (a3 – 4) (a – 2)

8. ab – 2b + a2 – 2a

Solution:

We have, ab – 2b + a2 – 2a

Grouping to arrive at a common term

= b(a – 2) + a(a – 2)

Taking common, we get

= (b + a) (a – 2)

9. ab(x2 + 1) + x(a2 + b2)

Solution:

We have, ab(x2 + 1) + x(a2 + b2)

On expanding,

= abx2 + ab + a2x + b2x

Now, grouping to arrive at a common term

= abx2 + a2x + b2x + ab

= ax(bx + a) + b(bx + a)

Taking common, we get

= (ax + b) (bx + a)

10. a2 + b – ab – a

Solution:

We have, a2 + b – ab – a

Grouping to arrive at a common term

= a2 – a + b – ab

= a(a – 1) – b(-1 + a)

= a(a – 1) – b(a – 1)

Taking common, we get

= (a – b) (a – 1)

11. (ax + by)2 + (bx – ay)2

Solution:

We have, (ax + by)2 + (bx – ay)2

On expanding,

= a2x2 + b2y2 + 2abxy + b2x2 + a2y2 – 2abxy

= a2x2 + b2y2 + b2x2 + a2y2

Rearranging terms, we get

= a2x2 + b2x2 + a2y2 + b2y2

Taking common, we get

= x2(a2 + b2) + y2(a2 + b2)

= (x2 + y2) (a2 + b2)

12. a2x2 + (ax2 + 1)x + a

Solution:

We have, a2x2 + (ax2 + 1)x + a

Regrouping the terms, we have

= a2x2 + a + (ax2 + 1)x

= a(ax2 + 1) + x(ax2 + 1)

Taking common, we get

= (ax2 + 1) (a + x)

13. (2a – b)2 – 10a + 5b

Solution:

We have, (2a – b)2 – 10a + 5b

Taking common,

= (2a – b)2 – 5(2a – b)

Now,

= (2a – b) [(2a – b) – 5]

= (2a – b) (2a – b – 5)

14. a(a – 4) – a + 4

Solution:

We have, a(a – 4) – a + 4

By grouping, we get

$= a(a – 4) -1(a – 4)$

Now, taking the common term

$= (a – 4) (a – 1)$

15. $y^2 – (a + b) y + ab$

Solution:

We have, $y^2 – (a + b) y + ab$

On expanding,

$= y^2 – ay – by + ab$

$= (y^2 – ay) – by + ab$

Taking 'y' and 'b' common from the group, we get

$= y(y – a) – b(y – a)$

$= (y – a) (y – b)$

16. $a^2 + 1/a^2 – 2 – 3a + 3/a$
Solution:

We have, $a^2 + 1/a^2 – 2 – 3a + 3/a$

On grouping terms, we get

$= (a^2 – 2 + 1/a^2) – 3a + 3/a$

$= [a^2 – (2 \times a \times 1/a) + 1/a^2] – 3(a – 1/a)$

$= (a – 1/a)^2 – 3(a – 1/a)$ {Since, $(x – y)^2 = x^2 – 2xy + y^2$}

Taking $(a – 1/a)$ as common, we get

$= (a – 1/a) [(a – 1/a) – 3]$

$= (a – 1/a) (a – 1/a – 3)$

17. $x^2 + y^2 + x + y + 2xy$

Solution:

We have, x2 + y2 + x + y + 2xy

On rearranging terms, we get

= (x2 + y2 + 2xy) + (x + y) {Since, (x + y)2 = x2 + 2xy + y2}

Now,

= (x + y)2 + (x + y)

= (x + y)(x + y + 1)

18. a2 + 4b2 – 3a + 6b – 4ab

Solution:

We have, a2 + 4b2 – 3a + 6b – 4ab

On rearranging terms, we get

= a2 + 4b2 – 4ab – 3a + 6b

Now,

= a2 + (2b)2 – 2 × a × (2b) – 3(a – 2b) {Since, (a – b)2 = a2 – 2ab + b2}

= (a – 2b)2 – 3(a – 2b)

= (a – 2b) [(a – 2b)- 3]

= (a – 2b) (a – 2b – 3)

19. m (x – 3y)2 + n (3y – x) + 5x – 15y

Solution:

We have, m (x – 3y)2 + n (3y – x) + 5x – 15y

Now,

Taking (x – 3y) common from all the three terms, we get

= m(x – 3y)2 – n(x – 3y) + 5(x – 3y)

= (x – 3y) [m(x – 3y) – n + 5]

= (x – 3y) (mx – 3my – n + 5)

20. x(6x – 5y) – 4(6x – 5y)2

Solution:

We have, x(6x – 5y) – 4(6x – 5y)2

Now,

Taking (6x – 5y) common from the three terms, we get

= (6x – 5y) [x – 4(6x – 5y)]

= (6x – 5y) (x – 24x + 20y)

= (6x – 5y) (-23x + 20y)

= (6x – 5y) (20y – 23x)

Exercise 5(B)

Factorize:

1. a2 + 10a + 24

Solution:

We have, a2 + 10a + 24

By splitting the middle term, we get

= a2 + 6a + 4a + 24

= a(a + 6) + 4(a + 6)

= (a + 4) (a + 6)

2. a2 – 3a – 40

Solution:

We have, a2 – 3a – 40

By splitting the middle term, we get

= a2 – 8a + 5a – 40

= a(a – 8) + 5(a – 8)

= (a + 5) (a – 8)

3. 1 – 2a – 3a2

Solution:

We have, 1 – 2a – 3a2

By splitting the middle term, we get

= 1 – 3a + a – 3a2

= 1(1 – 3a) + a(1 – 3a)

= (1 + a) (1 – 3a)

4. x2 – 3ax – 88a2

Solution:

We have, x2 – 3ax – 88a2

By splitting the middle term, we get

= x2 – 11ax + 8ax – 88a2

= x(x – 11a) + 8a(x – 11a)

= (x + 8a) (x – 11a)

5. $6a^2 – a – 15$

Solution:

We have, $6a^2 – a – 15$

By splitting the middle term, we get

= $6a^2 + 9a – 10a – 15$

= $3a(2a + 3) – 5(2a + 3)$

= $(3a – 5) (2a + 3)$

6. $24a^3 + 37a^2 – 5a$

Solution:

We have, $24a^3 + 37a^2 – 5a$

Taking ‘a’ common from all

= $a (24a^2 + 37a – 5)$

= $a (24a^2 + 40a – 3a – 5)$ {By splitting the middle term}

= $a [8a(3a + 5) – 1(3a + 5)]$

= $a [(8a – 1) (3a + 5)]$

= $a (8a – 1) (3a + 5)$

7. $a(3a – 2) – 1$

Solution:

We have, $a(3a – 2) – 1$

On expanding,

= $3a^2 – 2a – 1$

By splitting the middle term, we get

= 3a2 – 3a + a – 1

= 3a(a – 1) + 1(a – 1)

= (3a + 1) (a – 1)

8. a2b2 + 8ab – 9

Solution:

We have, a2b2 + 8ab – 9

By splitting the middle term, we get

= a2b2 + 9ab – ab – 9

= ab(ab + 9) – 1(ab + 9)

= (ab – 1) (ab + 9)

9. 3 – a (4 + 7a)

Solution:

We have, 3 – a (4 + 7a)

On expanding,

= 3 – 4a – 7a2

By splitting the middle term, we get

= 3 + 3a – 7a – 7a2

= 3(1 + a) – 7a(1 + a)

= (1 + a) (3 – 7a)

10. (2a + b)2 – 6a – 3b – 4

Solution:

We have, (2a + b)2 – 6a – 3b – 4

= (2a + b)2 – 3(2a + b) – 4

Let’s assume that (2a + b) = x

So, the expression becomes

= x2 – 3x – 4

By splitting the middle term, we get

= x2 – 4x + x – 4

= x(x – 4) + 1(x – 4)

= (x – 4) (x + 1)

Resubstituting the value of x, we get

= (2a + b – 4) (2a + b + 1)

11. 1 – 2 (a+ b) – 3 (a + b)2

Solution:

We have, 1 – 2 (a+ b) – 3 (a + b)2

Let’s assume (a + b) = x

Then, the expression becomes

= 1 – 2x – 3x2

By splitting the middle term, we get

= 1 – 3x + x – 3x2

= 1(1 – 3x) + x(1 – 3x)

= (1 – 3x) (1 + x)

Resubstituting the value of x, we get

= [1 – 3(a + b)] [1 + (a + b)]

= (1 – 3a – 3b) (1 + a + b)

12. 3a2 – 1 – 2a

Solution:

We have, 3a2 – 1 – 2a

Rearranging,

= 3a2 – 2a – 1

By splitting the middle term, we get

= 3a2 – 3a + a – 1

= 3a(a – 1) + 1(a – 1)

= (3a + 1) (a – 1)

13. x2 + 3x + 2 + ax + 2a

Solution:

We have, x2 + 3x + 2 + ax + 2a

By splitting the middle term, we get

= (x2 + 2x + x + 2) + ax + 2a

= x(x + 2) + 1(x + 2) + a(x + 2)

= (x + 2) (x + a + 1)

14. (3x – 2y)2 + 3 (3x – 2y) – 10

Solution:

We know, (3x – 2y)2 + 3 (3x – 2y) – 10

Let’s assume that (3x – 2y) = a

So, the expression becomes

= a2 + 3a – 10

By splitting the middle term, we get

= a2 + 5a – 2a – 10

= a(a + 5) – 2(a + 5)

= (a – 2) (a + 5)

= (3x – 2y + 5) (3x – 2y – 2)

15. 5 – (3a2 – 2a) (6 – 3a2 + 2a)

Solution:

Given, 5 – (3a2 – 2a) (6 – 3a2 + 2a)

= 5 – (3a2 – 2a) [6 – (3a2 – 2a)]

Let’s substitute (3a2 – 2a) = x

And, the expression becomes,

= 5 – x(6 – x)

= 5 – 6x – x2

= 5 – 5x – x – x2

= 5(1 – x) – x(1 – x)

= (1 – x) (5 – x)

= (x – 1) (x – 5)

$= (3a2 – 2a – 1) (3a2 – 2a – 5)$

Now,

$= (3a2 – 3a + a – 1) (3a2 + 3a – 5a – 5)$ {By splitting the middle term}

$= [3a(a – 1) + 1(a – 1)] [3a(a + 1) – 5(a + 1)]$

$= [(3a + 1) (a – 1)] [(3a – 5) (a + 1)]$

$= (3a + 1) (3a – 5) (a + 1)(a – 1)$

16. $1/35 + 12a/35 + a2$

Solution:

We have, $1/35 + 12a/35 + a2$

Taking common,

$= 1/35 (1 + 12a + 35a2)$

$= 1/35 (35a2 + 12a + 1)$

$= 1/35 (35a2 + 7a + 5a + 1)$ {By splitting the middle term}

$= 1/35 [7a(5a + 1) + 1(5a + 1)]$

$= 1/35 [(7a + 1) (5a + 1)]$

$= [(7a + 1) (5a + 1)]/ 35$

17. $(x2 – 3x) (x2 – 3x – 1) – 20$.

Solution:

We have, $(x2 – 3x) (x2 – 3x – 1) – 20$

$= (x2 – 3x)[(x2 – 3x) – 1] – 20$

Let’s

$= a[a - 1] - 20$ ….(Taking $x^2 - 3x = a$)

$= a^2 - a - 20$

$= a^2 - 5a + 4a - 20$

$= a(a - 5) + 4(a - 5)$

$= (a - 5)(a + 4)$

$= (x^2 - 3x - 5)(x^2 - 3x + 4)$

18. Find each trinomial (quadratic expression), given below, find whether it is factorisable or not. Factorise, if possible.

(i) $x^2 - 3x - 54$

(ii) $2x^2 - 7x - 15$

(iii) $2x^2 + 2x - 75$

(iv) $3x^2 + 4x - 10$

(v) $x(2x - 1) - 1$

Solution:

(i) Given, $x^2 - 3x - 54$

On comparing with the general form $ax^2 + bx + c$, we get

$a = 1$, $b = -3$ and $c = -54$

So, $b^2 - 4ac = (-3)^2 - 4(1)(-54) = 9 + 216 = 225$

225 is a perfect square

Thus, $x^2 - 3x - 54$ is factorisable

Now,

$x^2 - 3x - 54 = x^2 - 9x + 6x - 54$

= x(x – 9) + 6(x – 9)

= (x + 6) (x – 9)

(ii) Given, 2x2 – 7x – 15

On comparing with the general form ax2 + bx + c, we get

a = 2, b = -7 and c = -15

So, b2 – 4ac = (-7)2 – 4(2)(-15) = 49 + 120 = 169

169 is a perfect square

Thus, 2x2 – 7x – 15 is factorisable

Now,

2x2 – 7x – 15 = 2x2 – 10x + 3x – 15

= 2x(x – 5) + 3(x – 5)

= (2x + 3) (x – 5)

(iii) Given, 2x2 + 2x – 75

On comparing with the general form ax2 + bx + c, we get

a = 2, b = 2 and c = -75

So, b2 – 4ac = (2)2 – 4(2)(-75) = 4 + 600 = 604

604 is not a perfect square

Thus, 2x2 + 2x – 75 is not factorizable

(iv) Given, 3x2 + 4x – 10

On comparing with the general form ax2 + bx + c, we get

a = 3, b = 4 and c = -10

So, b2 – 4ac = (4)2 – 4(3)(-10) = 16 + 120 = 136

136 is a not perfect square

Thus, $3x2 + 4x – 10$ is not factorizable

(v) Given, $x(2x – 1) – 1$

$= 2x2 – x – 1$

On comparing with the general form $ax2 + bx + c$, we get

$a = 2$, $b = -1$ and $c = -1$

So, $b2 – 4ac = (-1)2 – 4(2)(-1) = 1 + 8 = 9$

9 is a perfect square

Thus, $x(2x – 1) – 1$ is factorisable

Now,

$x(2x – 1) – 1 = 2x2 – x – 1$

$= 2x2 – 2x + x – 1$

$= 2x(x – 1) + 1(x – 1)$

$= (2x + 1) (x – 1)$

19. Factorise:

(i) $4\sqrt{3}x2 + 5x – 2\sqrt{3}$

(ii) $7\sqrt{2}x2 – 10x – 4\sqrt{2}$

Solution:

(i) We have, $4\sqrt{3}x2 + 5x – 2\sqrt{3}$

By splitting the middle term, we get

$= 4\sqrt{3}x2 + 8x – 3x – 2\sqrt{3}$

$= 4x(\sqrt{3}x + 2) – \sqrt{3}(\sqrt{3}x + 2)$

$= (4x - \sqrt{3}) (\sqrt{3}x + 2)$

(ii) We have, $7\sqrt{2}x2 - 10x - 4\sqrt{2}$

By splitting the middle term, we get

$= 7\sqrt{2}x2 - 14x + 4x - 4\sqrt{2}$

$= 7\sqrt{2}x(x - \sqrt{2}) + 4(x - \sqrt{2})$

$= (7\sqrt{2}x + 4) (x - \sqrt{2})$

20. Give possible expressions for the length and the breadth of the rectangle whose area is $12x2 - 35x + 25$.

Solution:

We have, $12x2 - 35x + 25$

By splitting the middle term, we get

$= 12x2 - 20x - 15x + 25$

$= 4x(3x - 5) - 5(3x - 5)$

$= (3x - 5) (4x - 5)$

Hence,

Length = $(3x - 5)$ and breadth = $(4x - 5)$ or,

Length = $(4x - 5)$ and breadth = $(3x - 5)$

Exercise 5(C)

Factorize:

1. $25a2 - 9b2$

Solution:

We have, $25a2 - 9b2$

= (5a)2 – (3b)2

= (5a + 3b) (5a – 3b) [As x2 – y2 = (x + y)(x – y)

2. a2 – (2a + 3b)2

Solution:

We have, a2 – (2a + 3b)2

= [a – (2a + 3b)] [a + (2a + 3b)] [As x2 – y2 = (x + y)(x – y)]

= (a – 2a – 3b) (a + 2a + 3b)

= (-a – 3b) (3a + 3b)

= -3(a + 3b) (a + b)

3. a2 – 81(b-c)2

Solution:

We have, a2 – 81(b-c)2

= a2 – [9(b – c)]2

= [a – 9(b – c)] [a + 9(b – c)]] [As x2 – y2 = (x + y)(x – y)]

= (a – 9b + 9c) (a + 9b – 9c)

4. 25(2a – b)2 – 81b2

Solution:

We have, 25(2a – b)2 – 81b2

= [5(2a – b)]2 – (9b)2

= [5(2a – b) – 9b] [5(2a – b) + 9b] [As x2 – y2 = (x + y)(x – y)]

= (10a – 5b – 9b) (10a – 5b + 9b)

= (10a – 14b) (10a + 4b)

= 2(5a – 7b). 2(5a + 2b)

= 2(5a – 7b) (5a + 2b)

5. 50a3 – 2a

Solution:

We have, 50a3 – 2a

= 2a(25a2 – 1)

= 2a[(5a)2 – 12]

= 2a(5a – 1)(5a + 1) [As x2 – y2 = (x + y)(x – y)

6. 4a2b – 9b3

Solution:

We have, 4a2b – 9b3

= b(4a2 – 9b2)

= b[(2a)2 – (3b)2]

= b[(2a + 3b) (2a – 3b)] [As x2 – y2 = (x + y)(x – y)]

= b(2a + 3b)(2a – 3b)

7. 3a5 – 108a3

Solution:

We have, 3a5 – 108a3

= 3a3(a2 – 36)

= 3a3(a2 – 62)

= 3a3(a – 6) (a + 6) [As x2 – y2 = (x + y)(x – y)]

8. 9(a – 2)2 – 16(a + 2)2

Solution:

We have, 9(a – 2)2 – 16(a + 2)2

= [3(a – 2)]2 – [4(a + 2)]2

= [3(a – 2) – 4(a + 2)] [3(a – 2) + 4(a + 2)] [As x2 – y2 = (x + y)(x – y)]

= [3a – 6 – 4a – 8] [3a – 6 + 4a + 8]

= [-a – 14] [7a + 2]

= -(a + 14) (7a + 2)

9. a4 – 1

Solution:

We have, a4 – 1

= (a2)2 – 12

= (a2 – 1) (a2 + 1) [As x2 – y2 = (x + y)(x – y)]

= [(a – 1)(a + 1)] (a2 + 1)

= (a – 1)(a + 1)(a2 + 1)

10. a3 + 2a2 – a – 2

Solution:

We have, a3 + 2a2 – a – 2

= a2(a + 2) – 1(a + 2)

= (a2 – 1) (a + 2)

= (a – 1) (a + 1) (a + 2) [As x2 – y2 = (x + y)(x – y)]

11. (a + b)3 – a – b

Solution:

We have, (a + b)3 – a – b

= (a + b)3 – (a + b)

= (a + b) [(a + b)2 – 1]

= (a + b) [(a + b – 1) (a + b + 1)] [As x2 – y2 = (x + y)(x – y)]

= (a + b) (a + b -1) (a + b + 1)

12. a(a – 1) – b(b – 1)

Solution:

We have, a(a – 1) – b(b – 1)

= a2 – a – b2 + b

= (a2 – b2) – (a – b)

= (a + b) (a – b) – (a – b) [As x2 – y2 = (x + y)(x – y)]

= (a – b) [(a + b) – 1]

= (a – b) (a + b – 1)

13. 4a2 – (4b2 + 4bc + c2)

Solution:

We know, 4a2 – (4b2 + 4bc + c2)

= (2a)2 – [(2b)2 + 2(2b)(c) + c2]

= (2a)2 – (2b + c)2

= (2a – 2b – c) (2a + 2b + c) [As x2 – y2 = (x + y)(x – y)]

14. 4a2 – 49b2 + 2a – 7b

Solution:

We know, 4a2 – 49b2 + 2a – 7b

$= (2a)^2 – (7b)^2 + (2a – 7b)$

$= [(2a – 7b) (2a + 7b)] + (2a – 7b)$ [As $x^2 – y^2 = (x + y)(x – y)$]

$= (2a – 7b) [(2a + 7b) + 1]$

$= (2a – 7b) (2a + 7b + 1)$

15. $9a^2 + 3a – 8b – 64b^2$

Solution:

We have, $9a^2 + 3a – 8b – 64b^2$

$= 9a^2 – 64b^2 + 3a – 8b$

$= (3a)^2 – (8b)^2 + (3a – 8b)$

$= [(3a – 8b) (3a + 8b)] + (3a – 8b)$ [As $x^2 – y^2 = (x + y)(x – y)$]

$= (3a – 8b) [(3a + 8b) + 1]$

$= (3a – 8b) (3a + 8b + 1)$

16. $4a^2 – 12a + 9 – 49b^2$

Solution:

We have, $4a^2 – 12a + 9 – 49b^2$

$= [(2a)^2 – 2(2a)(3) + 3^2] – (7b)^2$

$= (2a – 3)^2 – (7b)^2$

$= (2a – 7b – 3) (2a + 7b – 3)$ [As $x^2 – y^2 = (x + y)(x – y)$]

17. $4xy – x^2 – 4y^2 + z^2$

Solution:

We have, $4xy – x^2 – 4y^2 + z^2$

On rearranging,

$= z^2 – x^2 – 4y^2 + 4xy$

$= z^2 – (x^2 + 4y^2 – 4xy)$

$= z^2 – (x – 2y)^2$

$= (z – x + 2y) (z + x – 2y)$ [As $x^2 – y^2 = (x + y)(x – y)$]

18. $a^2 + b^2 – c^2 – d^2 + 2ab – 2cd$

Solution:

We have, $a^2 + b^2 – c^2 – d^2 + 2ab – 2cd$

On rearranging,

$= a^2 + 2ab + b^2 – c^2 – d^2 – 2cd$

$= (a^2 + 2ab + b^2) – (c^2 + d^2 + 2cd)$

$= (a + b)^2 – (c + d)^2$

$= (a + b + c + d) (a + b – c – d)$ [As $x^2 – y^2 = (x + y)(x – y)$]

19. $4x^2 – 12ax – y^2 – z^2 – 2yz + 9a^2$

Solution:

We have, $4x^2 – 12ax – y^2 – z^2 – 2yz + 9a^2$

On rearranging,

$= 4x^2 – 12ax + 9a^2 – y^2 – z^2 – 2yz$

$= (4x^2 – 12ax + 9a^2) – (y^2 + z^2 + 2yz)$

$= (2x – 3a)^2 – (y + z)^2$

= (2x – 3a + y + z) (2x – 3a – y – z) [As x2 – y2 = (x + y)(x – y)]

20. (a2 – 1) (b2 – 1) + 4ab

Solution:

We have, (a2 – 1) (b2 – 1) + 4ab

By cross multiplying and expanding, we get

= (1 – a2 – b2 + a2b2) + 4ab

On manipulating,

= (a2b2 + 1 + 2ab) – (a2 + b2 – 2ab)

Now,

= (ab + 1)2 – (a – b)2

= [(ab + 1) – (a – b)] [(ab + 1) + (a – b)]

= (ab + 1 – a + b) (ab + 1 + a – b) [As x2 – y2 = (x + y)(x – y)]

21. x4 + x2 + 1

Solution:

We have, x4 + x2 + 1

= x4 + 2x2 + 1 – x2

= (x2 + 1)2 – x2 [As a2 – b2 = (a + b)(a – b)]

= (x2 + 1 – x) (x2 + 1 + x)

22. (a2 + b2 – 4c2)2 – 4a2b2

Solution:

We have, (a2 + b2 – 4c2)2 – 4a2b2

= (a2 + b2 – 4c2)2 – (2ab)2

= [(a2 + b2 – 4c2) + (2ab)] [(a2 + b2 – 4c2) – (2ab)] [As x2 – y2 = (x + y)(x – y)]

= [(a2 + b2 + 2ab) – 4c2] [(a2 + b2 – 2ab) – 4c2]

= [(a + b)2 – (2c)2] [(a – b)2 – (2c)2]

= [(a + b – 2c) (a + b + 2c)] [(a – b – 2c) (a – b + 2c)] [As x2 – y2 = (x + y)(x – y)]

= (a + b – 2c) (a + b + 2c) (a – b – 2c) (a – b + 2c)

23. (x2 + 4y2 – 9z2)2 – 16x2y2

Solution:

We have, (x2 + 4y2 – 9z2)2 – 16x2y2

= (x2 + 4y2 – 9z2)2 – (4xy)2

= (x2 + 4y2 – 9z2 – 4xy) (x2 + 4y2 – 9z2 + 4xy) [As x2 – y2 = (x + y)(x – y)]

= [(x2 – 4xy + 4y2) – 9z2] [(x2 + 4xy + 4y2) – 9z2]

= [(x – 2y)2 – (3z)2] [(x + 2y)2 – (3z)2]

= [(x – 2y + 3z) (x – 2y – 3z)] [(x +2y + 3z) (x + 2y – 3z)] [As x2 – y2 = (x + y)(x – y)]

= (x – 2y + 3z) (x – 2y – 3z)] [(x +2y + 3z) (x + 2y – 3z)

24. (a + b) 2 – a2 + b2

Solution:

We have, (a + b) 2 – a2 + b2

On expanding,

= (a2 + 2ab + b2) – a2 + b2

= 2b2 + 2ab

= 2b (b + a)

25. a2 – b2 – (a + b) 2

Solution:

We have, a2 – b2 – (a + b)

On expanding,

= a2 – b2 – (a2 + b2 + 2ab)

= a2 – b2 – a2 – b2 – 2ab

= -2b2 – 2ab

= -2b(b + a)

26. 9a2 – (a2 – 4)2

Solution:

We have, 9a2 – (a2 – 4)2

= (3a)2 – (a2 – 4)2

= [3a – (a2 – 4)] [3a + (a2 – 4)] [As x2 – y2 = (x + y)(x – y)]

= [3a – (a2 – 22)] [3a + (a2 – 22)]

= (3a – a2 + 4) (3a + a2 – 4)

= (-a2 + 3a + 4) (a2 + 3a – 4)

= (-a2 + 4a – a + 4) (a2 + 4a – a – 4) [By splitting the middle term]

= [a(-a + 4) + 1(-a + 4)] [a(a + 4) – 1(a + 4)]

= [(-a + 4) (a + 1)] [(a – 1) (a + 4)]

= (4 – a) (a + 1) (a – 1) (a + 4)

27. x2 + 1/x2 – 11

Solution:

We have, x2 + 1/x2 – 11

= x2 + 1/x2 – 2 – 9

= (x2 + 1/x2 – 2 × x × 1/x) – 9

= (x – 1/x)2 – 32

= (x – 1/x + 3) (x – 1/x – 3) [As a2 – b2 = (a + b)(a – b)]

28. 4x2 + 1/4x2 + 1

Solution:

We have, 4x2 + 1/4x2 + 1

= 4x2 + 1/4x2 + 2 – 1

= [(2x)2 + (1/2x)2 + 2 × 2x × 1/2x)] – 12

= (2x + 1/2x)2 – 12

= (2x + 1/2x + 1) (2x – 1/2x – 1) [As x2 – y2 = (x + y)(x – y)]

29. 4x4 – x2 – 12x – 36

Solution:

We know, 4x4 – x2 – 12x – 36

= 4x4 – (x2 + 12x + 36)

= (2x2)2 – [x2 + 2(x)(6) + 62]

= (2x2)2 – (x + 6)2

= (2x2 + x + 6) (2x2 – x – 6) [As x2 – y2 = (x + y)(x – y)]

= (2x2 + x + 6) (2x2 – 4x + 3x – 6) [By splitting the middle term]

$= (2x^2 + x + 6)\ [2x(x - 2) + 3(x - 2)]$

$= (2x^2 + x + 6)\ [(2x + 3)(x - 2)]$

$= (2x^2 + x + 6)(2x + 3)(x - 2)$

30. $a^2(b + c) - (b + c)^3$

Solution:

We have, $a^2(b + c) - (b + c)^3$

$= (b + c)\ [a^2 - (b + c)^2]$

$= (b + c)\ [(a - b - c)(a + b + c)]$ [As $x^2 - y^2 = (x + y)(x - y)$]

$= (b + c)(a - b - c)(a + b + c)$

Exercise 5(D)

Factorize:

1. $a^3 - 27$

Solution:

We have, $a^3 - 27$

$= a^3 - 3^3$

$= (a - 3)\ [a^2 + (a \times 3) + 3^2]$ [As, $a^3 - b^3 = (a - b)(a^2 + ab + b^2)$]

$= (a - 3)(a^2 + 3a + 9)$

2. $1 - 8a^3$

Solution:

We have, $1 - 8a^3$

$= 1^3 - (2a)^3$

= (1 – 2a) [12 + (1 x 2a) + (2a)2]

= (1 – 2a) (1 + 2a + 4a2) [As, a3 – b3 = (a – b) (a2 + ab + b2)]

3. 64 – a3b3

Solution:

We have, 64 – a3b3

= 43 – (ab)3

= (4 – ab) [42 + (4 x ab) + (ab)2]

= (4 – ab) (16 + 4ab + a2b2) [As, a3 – b3 = (a – b) (a2 + ab + b2)]

4. a6 + 27b3

Solution:

We have, a6 + 27b3

= (a2)3 + (3b)3

= (a2 + 3b) [(a2)2 – (a2 x 3b) + (3b)2]

= (a2 + 3b) (a4 – 3a2b + 9b2) [As, a3 + b3 = (a + b) (a2 – ab + b2)]

5. 3x7y – 81x4y4

Solution:

We have, 3x7y – 81x4y4

= 3xy (x6 – 27x3y3)

= 3xy [(x2)3 – (3xy)3]

= 3xy (x2 – 3xy) [(x2)2 + (x2 × 3xy) + (3xy)2] [As, a3 – b3 = (a – b) (a2 + ab + b2)]

= 3xy (x2 – 3xy) (x4 + 3x3y + 9x2y2)

= 3xy. x(x – 3y). x2(x2 + 3xy + 9y2) [Taking common from terms]

= 3x4y (x – 3y) (x2 + 3xy + 9y2)

6. a3 – 27/a3

Solution:

We have, a3 – 27/a3

= a3 – (3/a)3

= (a – 3/a) [a2 + a x 3/a + (3/a)2] [As, a3 – b3 = (a – b) (a2 + ab + b2)]

= (a – 3/a) (a2 + 3 + 9/a2)

7. a3 + 0.064

Solution:

We have, a3 + 0.064

= a3 + (0.4)3

= (a + 0.4) [a2 – (a x 0.4) + 0.42]

= (a + 0.4) (a2 – 0.4a + 0.16) [As, a3 + b3 = (a + b) (a2 – ab + b2)]

8. a4 – 343a

Solution:

We have, a4 – 343a

= a (a3 – 343)

= a (a3 – 73)

= a (a – 7) [a2 + (a x 7) + 72] [As, a3 – b3 = (a – b) (a2 + ab + b2)]

= a (a – 7) (a2 + 7a + 49)

9. (x – y)3 – 8x3

Solution:

We have, (x – y)3 – 8x3

= (x – y)3 – (2x)3

= (x – y – 2x) [(x – y)2 + 2x(x – y) + (2x)2] [As, a3 – b3 = (a – b) (a2 + ab + b2)]

= (-x – y) [x2 + y2 – 2xy + 2x2 – 2xy + 4x2]

= -(x + y) [7x2 – 4xy + y2]

10. 8a3/27 – b3/8

Solution:

We have, 8a3/27 – b3/8

= (2a/3)3 – (b/2)3

= (2a/3 – b/2) [(2a/3)2 + (2a/3 x b/2) + (b/2)2] [As, a3 – b3 = (a – b) (a2 + ab + b2)]

= (2a/3 – b/2) (4a2/9 + ab/3 + b2/4)

11. a6 – b6

Solution:

We have, a6 – b6

= (a3)2 – (b3)2

= (a3 + b3) (a3 – b3) [As x2 – y2 = (x + y) (x – y)]

Now,

= [(a + b) (a2 – ab + b2)] [(a – b) (a2 + ab + b2)] [Using identities]

= (a + b) (a – b) (a2 – ab + b2) (a2 + ab + b2)

12. a6 – 7a3 – 8

Solution:

We have, a6 – 7a3 – 8

By splitting the middle term,

= a6 – 8a3 + a3 – 8

= a3(a3 – 8) + 1(a3 – 8)

= (a3 + 1) (a3 – 8)

We know that,

a3 – b3 = (a – b) (a2 + ab + b2) … (1)

a3 + b3 = (a + b) (a2 – ab + b2) … (2)

Now,

(a3 + 1) (a3 – 8)

= [(a + 1) (a2 – a + 1)] [(a – 2)(a2 + 2a + 4)] … [Using (1) and (2)]

= (a + 1) (a – 2) (a2 + 2a + 4) (a2 – a + 1)

13. a3 – 27b3 + 2a2b – 6ab2

Solution:

We have, a3 – 27b3 + 2a2b – 6ab2

= [a3 – (3b)3] + 2ab(a – 3b)

= (a – 3b) (a2 + 3ab + 9b2) + 2ab(a – 3b) [As, a3 – b3 = (a – b) (a2 + ab + b2)]

Now, taking (a – 3b) as common

= (a – 3b) [(a2 + 3ab + 9b2) + 2ab]

= (a – 3b) (a2 + 5ab + 9b2)

14. 8a3 – b3 – 4ax + 2bx

Solution:

We have, 8a3 – b3 – 4ax + 2bx

$= (2a)^3 – b^3 – 2x(2a – b)$

$= (2a – b) [(2a)^2 – 2ab + b^2] – 2x(2a – b)$

Taking (2a – b) as common,

$= (2a – b) [(4a^2 + 2ab + b^2) – 2x]$

$= (2a – b) (4a^2 + 2ab + b^2 – 2x)$

15. $a – b – a^3 + b^3$

Solution:

We have, $a – b – a^3 + b^3$

$= (a – b) – (a^3 – b^3)$

$= (a – b) – [(a – b) (a^2 + ab + b^2)]$ [As, $a^3 – b^3 = (a – b) (a^2 + ab + b^2)$]

Now, taking (a – b) as common

$= (a – b) [1 – (a^2 + ab + b^2)]$

$= (a – b) (1 – a^2 – ab – b^2)$

16. $2x^3 + 54y^3 – 4x – 12y$

Solution:

We have, $2x^3 + 54y^3 – 4x – 12y$

$= 2(x^3 + 27y^3 – 2x – 6y)$

Now,

$= 2 \{[(x)^3 + (3y)^3] – 2(x + 3y)\}$

$= 2 \{[(x + 3y) (x^2 – 3xy + 9y^2)] – 2(x + 3y)\}$ [As, $a^3 + b^3 = (a + b) (a^2 – ab + b^2)$]

$= 2 (x + 3y) (x^2 – 3xy + 9y^2 – 2)$

17. $1029 – 3x^3$

Solution:

We have, 1029 – 3x3

= 3(343 – x3)

= 3(73 – x3)

= 3(7 – x) (72 + 7x + x2) [As, a3 – b3 = (a – b) (a2 + ab + b2)]

= 3(7 – x) (49 + 7x + x2)

18. Show that:

(i) 133 – 53 is divisible by 8

(ii)353 + 273 is divisible by 62

Solution:

(i) We have, (133 – 53)

Now, using identity (a3 – b3) = (a – b) (a2 + ab + b2)

= (13 – 5) (132 + 13 × 5 + 52)

= 8 × (169 + 65 + 25)

Hence, the number is divisible by 8.

(ii) (353 + 273)

Now, using identity (a3 + b3) = (a + b) (a2 – ab + b2)

= (35 + 27) (352 + 35× 27 + 272)

= 62 × (352 + 35 × 27 + 272)

Hence, the number is divisible by 62.

19. Evaluate:

Solution:

Let $a = 5.67$ and $b = 4.33$

Then,

$= a + b$

$= 5.67 + 4.33$

$= 10$

Exercise 5(E)

Factorize:

1. $x^2 + 1/4x^2 + 1 – 7x – 7/2x$

Solution:

We have,

$= [x^2 + 1/(2x)^2 + 2 \times x \times 1/(2x)] – 7 [x + 1/(2x)]$

$= (x + 1/2x)^2 – 7(x + 1/x)$

Taking out $(x + 1/2x)$ as common,

$= (x + 1/2x) (x + 1/2x – 7)$

2. $9a^2 + 1/9a^2 – 2 – 12a + 4/3a$

Solution:

3. $x^2 + (a^2 + 1) x/a + 1$

Solution:

4. $x^4 + y^4 – 27x^2y^2$

Solution:

We have, x4 + y4 – 27x2y2

= x4 + y4 – 2x2y2 – 25x2y2

= [(x2) + (y2) – 2x2y2] – 25x2y2

= (x2 – y2) – (5xy)2

= (x2 – y2 – 5xy) (x2 – y2 + 5xy) [As x2 – y2 = (x + y)(x – y)]

5. 4x4 + 9y4 + 11x2y2

Solution:

We have, 4x4 + 9y4 + 11x2y2

= 4x4 + 9y4 + 12x2y2 – x2y2

= (2x2)2 + (3y2)2 + 2(2x2)(3y2) – (xy)2

= (2x2 + 3y2)2 – (xy)2

= (2x2 + 3y2 – xy) (2x2 + 3y2 + xy) [As x2 – y2 = (x + y)(x – y)]

6. x2 + 1/x2 – 3

Solution:

We have, x2 + 1/x2 – 3

= x2 + 1/x2 – 2 – 1

= [x2 + 1/x2 – (2 × x × 1/x)] – 12

= (x – 1/x)2 – 12

= (x – 1/x – 1) (x – 1/x + 1) [As x2 – y2 = (x + y)(x – y)]

7. a – b – 4a2 + 4b2

Solution:

We have, a – b – 4a2 + 4b2

= (a – b) – 4(a2 – b2)

= (a – b) – 4(a – b)(a + b) [As x2 – y2 = (x + y)(x – y)]

Taking (a – b) common,

= (a – b) [1 – 4(a + b)]

= (a – b) [1 – 4a – 4b]

8. (2a – 3)2 – 2 (2a – 3) (a – 1) + (a – 1)2

Solution:

We have, (2a – 3)2 – 2(2a – 3)(a – 1) + (a – 1)2

Comparing with the identity, (a – b)2 = a2 – 2ab + b2

= [(2a – 3) – (a – 1)]2

= (2a – a – 3 + 1)2

= (a – 2)2

9. (a2 – 3a) (a2 – 3a + 7) + 10

Solution:

Let’s substitute (a2 – 3a) = x

Then the given expression becomes,

= x(x + 7) + 10

= x2 + 7x + 10

= x2 + 5x + 2x + 10 [By splitting the middle term]

= x(x + 5) + 2(x + 5)

= (x + 2) (x + 5)

Resubstituting the value of x,

= (a2 – 3a + 2) (a2 – 3a + 5)

= (a2 – 3a + 5) (a2 – 3a + 2)

= (a2 – 3a + 5) [a2 – 2a – a + 2] [By splitting the middle term]

= (a2 – 3a + 5) [a(a – 2) – 1(a – 5)]

= (a2 – 3a + 5) [(a – 1) (a – 2)]

= (a2 – 3a + 5) (a – 1) (a – 2)

10. (a2 – a) (4a2 – 4a – 5) – 6

Solution:

Let’s a2 – a = x

Then the expression becomes,

= x(4x – 5) – 6

= 4x2 – 5x – 6

= 4x2 – 8x + 3x – 6

= 4x(x – 2) + 3(x – 2)

= (4x + 3) (x – 2)

Resubstituting the value of x,

= (4a2 – 4a + 3) (a2 – a – 2)

= (4a2 – 4a + 3) (a2 – 2a + a – 2)

= (4a2 – 4a + 3) [a(a – 2) + 1(a – 2)]

= (4a2 – 4a + 3) [(a + 1) (a – 2)]

= (4a2 – 4a + 3) (a + 1) (a – 2)

11. x4 + y4 – 3x2y2

Solution:

We have, x4 + y4 – 3x2y2

= (x4 + y4 – 2x2y2) – x2y2

= (x2 – y2) – (xy)2 [As x2 – y2 = (x + y)(x – y)]

= (x2 – y2 – xy) (x2 – y2 + xy)

12. 5a2 – b2 – 4ab + 7a – 7b

Solution:

We have, 5a2 – b2 – 4ab + 7a – 7b

= 4a2 + a2 – b2 – 4ab + 7a – 7b

= a2 – b2 + 4a2 – 4ab + 7a – 7b

= (a2 – b2) + 4a(a – b) + 7(a – b)

= (a + b)(a – b) + 4a(a – b) + 7(a – b) [As x2 – y2 = (x + y)(x – y)]

= (a – b) [(a + b) + 4a + 7]

= (a – b) (5a + b + 7)

13. 12(3x – 2y)2 – 3x + 2y – 1

Solution:

We have, 12(3x – 2y)2 – 3x + 2y – 1

= 12(3x – 2y)2 – (3x – 2y) – 1

Let’s substitute (3x – 2y) = a

Then, the expression becomes

= 12a2 – a – 1

$= 12a2 – 4a + 3a – 1$

$= 4a (3a – 1) + 1(3a – 1)$

$= (4a + 1) (3a – 1)$

Now, resubstituting the value of ‘a’ in the above

$= [4(3x – 2y) + 1] [3(3x – 2y) – 1]$

$= (12x – 8y + 1) (9x – 6y – 1)$

14. $4(2x – 3y)2 – 8x+12y – 3$

Solution:

We have, $4(2x – 3y)2 – 8x+12y – 3$

$= 4(2x – 3y)2 – 4(2x + 3y) – 3$

Let’s substitute $(2x – 3y) = a$

$= 4(a2) – 4a – 3$

$= 4a2 – 6a + 2a – 3$ [By splitting the middle term]

$= 2a(2a – 3) + 1(2a – 3)$

$= (2a – 3) (2a + 1)$

Now, resubstituting the value of ‘a’ in the above

$= [2(2x – 3y) – 3] [2(2x – 3y) + 1]$

$= (4x – 6y – 3) (4x – 6y + 1)$

15. $3 – 5x + 5y – 12(x – y)2$

Solution:

We have, $3 – 5x + 5y – 12(x – y)2$

$= 3 – 5(x – y) – 12(x – y)2$

Let's substitute $(x – y) = a$

$= 3 – 5a – 12a^2$

$= 3 – 9a + 4a – 12a^2$ [By splitting the middle term]

$= 3(1 – 3a) + 4a(1 – 3a)$

$= (1 – 3a) (4a + 3)$

Now, resubstituting the value of 'a' in the above

$= [1 – 3(x – y)] [4(x – y) + 3]$

$= (1 – 3x + 3y) (4x – 4y + 3)$

16. $9x^2 + 3x – 8y – 64y^2$

Solution:

We have, $9x^2 + 3x – 8y – 64y^2$

On rearranging,

$= 9x^2 – 64y^2 + 3x – 8y$

$= [(3x)^2 – (8y)^2] + (3x – 8y)$

$= (3x – 8y) (3x + 8y) + (3x – 8y)$ [As $x^2 – y^2 = (x + y)(x – y)$]

Taking $(3x – 8y)$ as common,

$= (3x – 8y) (3x + 8y + 1)$

17. $2\sqrt{3}x^2 + x – 5\sqrt{3}$

Solution:

We have, $2\sqrt{3}x^2 + x – 5\sqrt{3}$

By splitting the middle term,

$= 2\sqrt{3}x^2 + 6x – 5x – 5\sqrt{3}$

= 2√3x(x + √3) – 5(x + √3)

= (2√3x – 5) (x + √3)

18. ¼ (a + b)2 – 9/16 (2a – b)2

Solution:

19. 2(ab + cd) – a2 – b2 + c2 + d2

Solution:

We have, 2(ab + cd) – a2 – b2 + c2 + d2

= 2ab + 2cd – a2 – b2 + c2 + d2

On rearranging and grouping, we get

= (c2 + d2 + 2cd) – (a2 + b2 – 2ab)

= (c + d)2 – (a – b)2

= [c + d – (a – b)] [c + d + (a – b)] [As x2 – y2 = (x + y)(x – y)]

= (c + d – a + b) (c + d + a – b)

20. Find the value of:

(i) 9872 – 132

(ii) (67.8)2 – (32.2)2

(iii) [(6.7)2 – (3.3)2]/ (6.7 – 3.3)

(iv) [(18.5)2 – (6.5)2]/ (18.5 – 6.5)

Solution:

(i) We have, 9872 – 132

= (987 + 13) (987 – 13)

= 1000 x 974

= 974000

(ii) We have, $(67.8)^2 – (32.2)^2$

= (67.8 + 32.2) (67.8 – 32.2)

= 100 x 35.6

= 3560

Benefits of ICSE Class 9 Maths Selina Solutions Chapter 5 Factorization

1. Helps to plan a preparation strategy

Attempting ICSE Class 9 Maths Selina Solutions Chapter 5 is the best strategy to prepare for the exam. Candidates can plan study table for all subjects and give more time to weak sections. By this candidates can attempt all the questions during the exam. And at the closing time, they have to perfect everything they have learned.

2. Preparation Level Overview

One of the best advantages of ICSE Class 9 Maths Selina Solutions Chapter 5 Factorization is that it helps candidates know where they stand in terms of their preparation level. This helps candidates know where they are lagging behind. Candidates can learn from their mistakes and follow the test exam solutions and strategies.

3. Performance analysis

No one can learn anything unless they analyze their performance. Candidates can know their weak and strong points only by analyzing them. Analyzing the ICSE Class 9 Maths solution Chapter 5 will make the candidates aware that they will not repeat their mistakes in the exam hall. Analyzing the solutions helps the candidate to get an idea of where they stand in the competition to take the ICSE Class 9 Maths Exam.

5. Time planning aids

A candidate cannot afford to deal with a question that takes time. Some questions can be difficult and some can be solved at a glance. ICSE Class 9 Maths Selina Solutions help candidates to develop such skills. Candidates will implement the question solving pattern with right approach which will help them to crack the exam on time. Solving most of the questions in less time, they give the remaining time to the more difficult parts.

6. Improve Accuracy and Speed

It helps candidates to improve accuracy and speed. The more they solve different questions, the better they explain their concepts and tricks. Accuracy and speed are important in the selection process. This will help them clear the upcoming ICSE class 9 Maths Exam.

[wp-faq-schema title="ICSE Class 9 Maths Selina Solutions Chapter 5 FAQs" accordion=1]
Q1. What is Factorization?
Ans. In mathematics, Factorization is writing a number or other mathematical object as the product of several factors, usually the product of smaller or simpler similar objects. For example, 3×5 is an integer factorization of 15 and is a polynomial factorization of $x^2 - 4$.
Q2. Where can I get the ICSE Class 9 Maths Selina Solutions Chapter 5 Factorization?
Ans. You can get the ICSE Class 9 Maths Selina Solutions Chapter 5 - Factorization at PW blog section.
Q3. Is ICSE Class 9 Maths Selina Solutions Chapter 5 PDF available to download?
Ans. Yes, ICSE Class 9 Maths Selina Solutions Chapter 5 PDF is available for download on our page.
Q4. What are the Benefits of ICSE Class 9 Maths Selina Solutions Chapter 5 Factorization?
Ans. The details Benefits of ICSE Class 9 Maths Selina Solutions Chapter 5 Factorization are provided in the above article.

Q5. Are ICSE Class 9 Maths Selina Solutions Chapter 5 useful for exam preparation?
Ans. Yes, these ICSE Class 9 Maths Selina Solutions Chapter 5 are extremely beneficial for exam preparation. They cover all topics and exercises prescribed in the ICSE curriculum, ensuring comprehensive revision and practice.