



# INDIAN SCHOOL AL WADI AL KABIR (2024-25)

Class VIII, Mathematics

## WORKSHEET (MCQ&CASE STUDY)-FACTORISATION

### Multiple Choice Questions

|             |                                                                    |                          |          |                         |          |                       |          |                       |
|-------------|--------------------------------------------------------------------|--------------------------|----------|-------------------------|----------|-----------------------|----------|-----------------------|
| <b>Q.1.</b> | The common factor of $6p^3q^8, 15p^4q^6, 24p^5q^2$                 |                          |          |                         |          |                       |          |                       |
|             | <b>A</b>                                                           | $3p^2q^5$                | <b>B</b> | $6p^4q^4$               | <b>C</b> | $6pq$                 | <b>D</b> | $3p^3q^2$             |
| <b>Q.2.</b> | $(125m^3 - 5m) \div (5m - 1)$                                      |                          |          |                         |          |                       |          |                       |
|             | <b>A</b>                                                           | $5(m + 1)$               | <b>B</b> | $5m(5m + 1)$            | <b>C</b> | $25m + 1$             | <b>D</b> | $5m(m^2 + 1)$         |
| <b>Q.3.</b> | The area of a rectangle is $x^2 - 5x - 14$ , its dimensions can be |                          |          |                         |          |                       |          |                       |
|             | <b>A</b>                                                           | $(x - 7)(x + 2)$         | <b>B</b> | $(x - 8)(x - 2)$        | <b>C</b> | $(x + 7)(x - 2)$      | <b>D</b> | $(x + 9)(x + 5)$      |
| <b>Q.4.</b> | $36y^4 + 18y^3 - 27y^6$ can be factorised as:                      |                          |          |                         |          |                       |          |                       |
|             | <b>A</b>                                                           | $9y(4y^3 + 2y^2 - 3y^5)$ | <b>B</b> | $9y^2(4y^4 + 2 - 3y^3)$ | <b>C</b> | $9y^3(4y + 2 - 3y^3)$ | <b>D</b> | $9y^3(4y + 2 - 3y^3)$ |
| <b>Q.5.</b> | The factors of $abx + aby - bcx - bcy$                             |                          |          |                         |          |                       |          |                       |
|             | <b>A</b>                                                           | $b(x+y)(a-c)$            | <b>B</b> | $a(x+y)(b-c)$           | <b>C</b> | $c(x+y)(a-b)$         | <b>D</b> | $b(x+y)(c-a)$         |
| <b>Q.6.</b> | The area of a square is $4m^2 - 12m + 9$ . Its side length is      |                          |          |                         |          |                       |          |                       |
|             | <b>A</b>                                                           | $m - 4$                  | <b>B</b> | $2m + 3$                | <b>C</b> | $2m - 3$              | <b>D</b> | $m + 3$               |
| <b>Q.7.</b> | The quotient of $(64a^5b^3c^7) \div (-4a^2bc^4)$                   |                          |          |                         |          |                       |          |                       |
|             | <b>A</b>                                                           | $-16a^3b^3c^4$           | <b>B</b> | $-16a^3b^2c^3$          | <b>C</b> | $16a^2b^2c^2$         | <b>D</b> | $-16ab^2c^2$          |
| <b>Q.8.</b> | $5y^2 - 20y - 8z + 2yz$ can be factorized as                       |                          |          |                         |          |                       |          |                       |
|             | <b>A</b>                                                           | $5y(y-4)+2z$             | <b>B</b> | $(y+4)(5y + 2z)$        | <b>C</b> | $(y-4)(5y + 2z)$      | <b>D</b> | $2yz(5+4y)$           |
| <b>Q.9.</b> | On dividing $p^2 + 7p - 60$ by $(p-5)$ we will get                 |                          |          |                         |          |                       |          |                       |
|             | <b>A</b>                                                           | $P+12$                   | <b>B</b> | $P + 7$                 | <b>C</b> | $P-12$                | <b>D</b> | $P+5$                 |
| <b>Q.10</b> | The factors of $50x^2 - 98y^2$                                     |                          |          |                         |          |                       |          |                       |
|             | <b>A</b>                                                           | $2(5x+7y)(5x+7y)$        | <b>B</b> | $2(5x+7y)(5x-7y)$       | <b>C</b> | $2x(x+5)(x+7)$        | <b>D</b> | $2(5x+7)(5y+7)$       |

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |          |               |          |               |          |               |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|---------------|----------|---------------|----------|---------------|
|             | <b>Source-based question:</b> (CBQ)<br>Two brothers Anuj and Akhil started a business. The share of two brothers given by $m^2+10m +21$ which is the product of their individual share,                                                                                                                                                                                                                                                                                                                                                                                                                          |               |          |               |          |               |          |               |
| <b>Q.11</b> | The capital of two brothers when $m=500$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |          |               |          |               |          |               |
|             | <b>A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ₹250021       | <b>B</b> | ₹205021       | <b>C</b> | ₹255021       | <b>D</b> | ₹255521       |
| <b>Q.12</b> | Which of the following can be the individual share of brothers?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |          |               |          |               |          |               |
|             | <b>A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | $(m+3)(m+7)$  | <b>B</b> | $(m-3)(m+7)$  | <b>C</b> | $(m+3)(m-7)$  | <b>D</b> | $(m-3)(m-7)$  |
| <b>Q.13</b> | What the sum of their shares?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |          |               |          |               |          |               |
|             | <b>A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | $2m+5$        | <b>B</b> | $2m+10$       | <b>C</b> | $2m-5$        | <b>D</b> | $2m-10$       |
| <b>Q.14</b> | If they changed product of their shares as $a^2-10a-75$ , Which of the following can be their individual share?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |          |               |          |               |          |               |
|             | <b>A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | $(a-5)(a-15)$ | <b>B</b> | $(a+5)(a+10)$ | <b>C</b> | $(a+5)(a+15)$ | <b>D</b> | $(a+5)(a-15)$ |
| <b>Q.15</b> | The value of $a^2-10a-75$ when $a=(-3)$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |          |               |          |               |          |               |
|             | <b>A</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | -54           | <b>B</b> | 36            | <b>C</b> | -96           | <b>D</b> | 45            |
| <b>Q16.</b> | <b>CASE STUDY:</b> The students of class VIII were asked to make a logo for their "Maths Club". The teacher gave each student a rectangular cut out and instructed to utilize the entire rectangular area for making the logo as creative as they can. Out of many, one logo was selected. The area of the logo is $x^2+5x-36$ cm <sup>2</sup> and the length is $(x+9)$ cm. Read the above case carefully and answer the following questions.<br>I. Find the width of the logo.<br>II. What will be the area of the logo if $x=6$ ?<br>III. Write an algebraic expression that gives the perimeter of the logo. |               |          |               |          |               |          |               |

## ANSWERS

|     |   |     |   |     |   |     |                                                                 |
|-----|---|-----|---|-----|---|-----|-----------------------------------------------------------------|
| 1.  | D | 2.  | B | 3.  | A | 4.  | D                                                               |
| 5.  | A | 6.  | C | 7.  | B | 8.  | C                                                               |
| 9.  | A | 10. | B | 11. | C | 12. | A                                                               |
| 13. | B | 14. | D | 15. | B | 16. | I. $(x-4)$ cm<br>II. $30\text{cm}^2$<br>III. $(4x+10)\text{cm}$ |