

INTERNATIONAL INDIAN SCHOOL BURAIDAH

Worksheet for the Academic Year 2025-26

CLASS: VIII

SUBJECT: MATHEMATICS

DATE: 12-01-2026

Lesson 12: FACTORISATION

1. Find the H.C.F. of the monomials:
 - (a) $4x^2$ and $10xy$
 - (b) $21a^2b$ and $49ab^2$
 - (c) x^2y^2 and $-5y^2$
 - (d) $4x^3$, $6y^2$ and $8z$
 - (e) $2x^2y^3$, $10x^3y^2$ and $14xy$
 - (f) $5x^3$, $-15x^2$ and $45x$
2. Find the common factors of the given terms:
 - (a) $3x^2$, $15xy$
 - (b) $33x^2y$, $-77xy^2$
 - (c) $9x^2y^2z$, $54xyz^2$
 - (d) x^3y^2 , $-5y^2$
 - (e) $4x^3$, $10y^3$, $6z^3$
 - (f) $2xyz^2$, $3x^2y^2z$, $5xyz$
3. Factorize the following binomials:
 - a) $3a + 21$
 - b) $7m - 14$
 - c) $y^3 + 3y$
 - d) $20x + 5x^2$
 - e) $-16x + 20x^3$
 - f) $5x^2y + 15xy^2$
 - g) $9a^2 + 5a$
 - h) $19a - 57b$
 - i) $25a^2b^2c^3 - 15ab^3c$
4. Factorize the following expressions.
 - a) $-11p^2s^3 + 121p^3y^2$
 - b) $a^3 - 4a^2 + 12 - 3a$
 - c) $5x^2 - 20x - 25$
5. Factorize using suitable identity:
 - a) $4p^2 - 20pq + 25q^2$

- b) $t^2 - 8t + 16$
- c) $28ay^2 - 175az^2$
- d) $m^2 - 9$
- e) $x^4 - 256$

6. Factorise the following expressions:

- a) $2x^2 + 9x + 10$
- b) $x^2 + 5x + 6$
- c) $a^2 + 10a + 24$
- d) $3x^2 - 11x - 4$
- e) $9x^2 - 47x + 10$
- f) $3x^2 - x - 4$

7. Factorize the expressions and divide them as directed:

- a) $(2k^3 - 34k^2 + 144k) \div (k - 9)(k - 8)$
- b) $(f^3 + f^2 - 132f) \div f(f - 11)$
- c) $15(y + 3)(y^2 - 16) \text{ by } 5(y^2 - y - 12)$
- d) $(3p^2 + 17p + 10) \div (p + 5)$
- e) $27z^3(50z^2 - 98) \div 18z^2(5y + 7)$
- f) $(m^4 - 16) \div (m^2 + 4)$
- g) $(a^2 - 14a - 32) \div (a + 2)$

8. The area of a square is given by $4x^2 + 52xy + 169y^2$ sq. units. Find the side of the square

9. If $a + b = 25$ and $a^2 + b^2 = 225$, then find ab .

10. The area of a rectangle is $x^2 + 7x + 12$ sq. units. If its breadth is $(x + 3)$ units, then find its length?

Answers:

- 1. a) $2x$ b) $7ab$ c) y^2 d) 2 e) $2xy$ f) $5x$
- 2. a) $3x$ b) $11xy$ c) $9xyz$ d) y^2 e) 1 f) xyz
- 3. a) $3(a + 7)$ b) $7(m - 2)$ c) $y(y^2 + 3)$ d) $5x(x + 4)$
- e) $4x(5x^2 - 4)$ f) $5xy(x + 3y)$ g) $a(9a + 5)$
- h) $19(a - 3b)$ i) $5ab^2c(5abc^2 - 3b)$
- 4. a) $11p^2s^2(11py^2 - 1)$ b) $(a - 1)(a^2 - 3a - 12)$ c) $5(x - 5)(x + 1)$
- 5. a) $(2p - 5q)^2$ b) $(t - 4)^2$ c) $7a(2y - 5z)(2y + 5z)$
- d) $(m - 3)(m + 3)$ e) $(x^2 - 16)(x^2 + 16)$

6. a) $(2x + 5)(x + 2)$

b) $(x + 2)(x + 3)$

c) $(a + 4)(a + 6)$

d) $(3x + 1)(x - 4)$

e) $(9x - 2)(x - 5)$

f) $(3x - 4)(x + 1)$

7. a) $2k$

b) $(f + 12)$

c) $3(y + 4)$

d) $3p + 2$

e) $\frac{3z(25z^2 - 49)}{2(5y + 7)}$

f) $m^2 - 4$

g) $a - 16$

8. $(2x + 13y)$ units

9. 200

10. $(x + 4)$ units
