



ST. LAWRENCE HIGH SCHOOL

A JESUIT CHRISTIAN MINORITY INSTITUTION



CLASS 8

SUBJECT :Algebra& GeometryWork sheet21Answer key

Marks:15Factorisation

Date:8.5.21

Answer all the following questions(1×15=15)

1. The common factor of $36p^2q^3x^4$, $48pq^3x^2$ and $54p^3q^3x^4$ is

(a) $6pq^3x^2$

(b) $36pq^3x^2$

(c) $54pq^3x^2$

(d) $48pq^3x^2$

Answer: (a) $6pq^3x^2$

Hint:

$$36p^2q^3x^4 = 2 \times 2 \times 3 \times 3 \times p \times p \times q \times q \times q \times x \times x \times x \times x$$

$$48pq^3x^2 = 2 \times 2 \times 2 \times 2 \times 3 \times p \times q \times q \times q \times x \times x$$

$$p^3q^3x^4 = p \times p \times p \times q \times q \times q \times x \times x \times x \times x$$

2. The factorisation of $12a^2b + 15ab^2$ is

(a) $3ab(4a + 5b)$

(b) $3a^2b(4a + 5b)$

(c) $3ab^2(4a + 5b)$

(d) $3a^2b^2(4a + 5b)$.

Answer: (a) $3ab(4a + 5b)$

3. The factorisation of $10x^2 - 18x^3 + 14x^4$ is

(a) $2x^2(7x^2 - 9x + 5)$

(b) $2x(7x^2 - 9x + 5)$

(c) $2(7x^2 - 9x + 5)$

(d) $2x^3(7x^2 - 9x + 5)$.

Answer: (a) $2x^2(7x^2 - 9x + 5)$

4. The factorisation of $6x - 42$ is

(a) $6(x - 7)$

(b) $3(x - 7)$

(c) $2(x - 7)$

(d) $6(x + 7)$

Answer: (a) $6(x - 7)$

5. The factorisation of $6x + 12y$ is

(a) $6(x + 2y)$

(b) $3(x + 4y)$

(c) $2(3x + 12y)$

(d) none of these.

Answer: (a) $6(x + 2y)$

6. The factorisation of $28a^3b^5 - 42a^5b^3$ is

(a) $14a^3b^3(2b^2 - 3a^2)$

(b) $14a^2b^3(2b^2 - 3a^2)$

(c) $14a^3b^2(2b^2 - 3a^2)$

(d) none of these.

Answer: (a) $14a^3b^3(2b^2 - 3a^2)$

7. The factorisation of $a^3 + a^2b + ab^2$ is

(a) $a(a^2 + ab + b^2)$

(b) $6(a^2 + ab + b^2)$

(c) $ab(a^2 + ab + b^2)$

(d) none of these

Answer: (a) $a(a^2 + ab + b^2)$

8. The factorisation of $x^2yz + xy^2z + xyz^2$ is

(a) $xyz(x + y + z)$

(b) $x^2yz(x + y + z)$

(c) $xy^2z(x + y + z)$

(d) $xyz^2(x + y + z)$.

Answer: (a) $xyz(x + y + z)$

9. The factorisation of $ax^2y + bxy^2 + cxyz$ is

(a) $xy(ax + by + cz)$

(b) $axy(ax + by + cz)$

(c) $bxy(ax + by + cz)$

(d) $cxy(ax + by + cz)$.

Answer: (a) $xy(ax + by + cz)$

10. The factorisation of

$a(x + y + z) + b(x + y + z) + c(x + y + z)$ is

(a) $(a + b + c)(x + y + z)$

(b) $(ab + bc + ca)(x + y + z)$

(c) $(xy + yz + zx)(a + b + c)$

(d) none of these.

Answer: (a) $(a + b + c)(x + y + z)$

Hint:

$$a(x + y + z) + b(x + y + z) + c(x + y + z)$$

$$= (x + y + z)(a + b + c).$$

11. The factorisation of $6xy - 4y + 6 - 9x$ is

(a) $(3x - 2)(2y - 3)$

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

(c) $(3x - 2)(2y + 3)$

(d) $(3x + 2)(2y + 3)$

Answer: (a) $(3x - 2)(2y - 3)$

Hint:

$$6xy - 4y + 6 - 9x$$

$$= 2y(3x - 2) - 3(-2 + 3x)$$

$$= (3x - 2)(2y - 3)$$

12. The factorisation of $x^2 + xy + 2x + 2y$ is

(a) $(x + 2)(x + y)$

(b) $(x + 2)(x - y)$

$$(c) (x - 2)(x + y)$$

$$(d) (x - 2)(x - y)$$

$$\text{Answer: (a) } (x + 2)(x + y)$$

Hint:

$$x^2 + xy + 2x + 2y$$

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

$$= (x + 2)(x + y).$$

13. The factorisation of $ax + bx - ay - by$ is

$$(a) (x - y)(a + b)$$

$$(b) (x + y)(a + b)$$

$$(c) (x - y)(a - b)$$

$$(d) (x + y)(a - b).$$

$$\text{Answer: (a) } (x - y)(a + b)$$

Hint:

$$ax + bx - ay - by$$

$$= x(a + b) - y(a + b)$$

$$= (x - y)(a + b).$$

14. The factorisation of $ab - a - b + 1$ is

$$(a) (a - 1)(b - 1)$$

$$(b) (a + 1)(b + 1)$$

$$(c) (a - 1)(b + 1)$$

$$(d) (a + 1)(b - 1).$$

$$\text{Answer: (a) } (a - 1)(b - 1)$$

Hint:

$$ab - a - b + 1$$

$$= a(b - 1) - 1(b - 1)$$

$$= (a - 1)(b - 1).$$

15. The factorisation of

$$x^2 + x + xy + y + zx + z \text{ is}$$

$$(a) (x + y + z)(x + 1)$$

$$(b) (x + y + z)(x + y)$$

$$(c) (x + y + z)(y + z)$$

$$(d) (x + y + z)(z + x)$$

$$\text{Answer: (a) } (x + y + z)(x + 1)$$

Hint:

$$x^2 + x + xy + y + zx + z$$

$$= x(x + 1) + y(x + 1) + z(x + 1)$$

$$= (x + 1)(x + y + z).$$