

INTERNATIONAL INDIAN SCHOOL BURAIDAH

Worksheet for the Academic Year 2023-24

CLASS: VII SUBJECT: MATHEMATICS DATE:10-01-2024

LESSON: 12 ALGEBRAIC EXPRESSIONS

1. Identify the terms and their factors in the following expressions. Show the terms and factors by tree diagram

a) $4x + 7y$

b) $5x^2 - 7x + 15$

c) $-x - 7xy + 8yz$

d) $3a^2 - 7ab$

2. Write the terms and their factors in the following expressions:

a) $4x - y^2$

b) $3x + 7y + 4z$

c) $8xyz - 4x^2y^2 + 9$

d) $5y^2 - 11$

3. Write the numerical coefficients of the terms in the following expressions:

a) $3x^2 + 4x + 2$

b) $0.3a - 0.7b$

c) $3t^2 + 5t + 12$

d) $10xy - 7x^2 + 11x^2y$

4. Classify the following as monomials, binomials, and trinomials:

a) $11a$

b) $a^2 - b^2$

c) $a - b + c$

d) $10xyz$

e) $16x + 5y + 8$

5. Write the like terms:

$5x, 10xy, -2x^2y, 8xy, -4xy^2, 7x, 15, 14xy, 7, 6x^2y, 18$

6. Find the sum of the following expressions:

a) $2p, -3q, 6p, -11q$

b) $x^2 + y^2, 2x^2, -3y^2, 3x^2 - 4y^2$

c) $a^2 - 7ab + b^2, 8ab - 7b^2 - 3a^2$

d) $x^2+7x-11$, $-3x^2-5x+16$, $6x^2+2x-9$

7. Subtract the following expressions:

a) $(2a - 7b)$ from $(a + 10b)$

b) $15x^2 - 6xy + 3y^2$ from $11x^2 + 16xy - 19y^2$

c) $(a^3 + 3a^2b^2 - b^3)$ from $3a^3 - 4a^2b^2 - 7b^3$

d) $3p^2 + 7pq + q^2$ from $-p^2 + 7pq - 2q^2$

8. Simplify $(a^2 + 3ab - 7b^2) + (6a^2 - 9ab + b^2) - (11a^2 - ab - 6b^2)$

9. What should be added to $7x^2 + 3xy - y^2$ to get $-x^2 + 2xy + y^2$

10. From the sum of $a^2 - 7a + 10$ and $3a^2 + 4a - 15$ subtract $2a^2 + a - 9$

11. Simplify the following expressions and then find the values for $x = -2$ and

$y = 2$

a) $2(1-x) + 3(x-1) - 10$

b) $(-2+x) - 4(2+y)$

12. Find the value of 't' if the value of $3x^2 + 5x - 2t$ equals to 8, when $x = -1$

13. Find the value of the expression $a^2 - bc + ab - b^2$ if $a = 1$, $b = -1$ and $c=0$
