Brain International School

Maths Assignment **Class VI** **October 2024**

ALGEBRAIC EXPRESSIONS

1. Identify the terms in the given expressions and write their coefficients.
(i) $5x - 3$
(ii) $11 - 2y^2$
(iii) $2x - 1$
(iv) $4x^2y + 3xy^2 - 5$

2. Group the like terms together from the following expressions:
$-8x^2y, 3x, 4y, -32x, 2x^2y, -y$

3. Classify the following into monomials, binomial and trinomials:
(i) -6
(ii) $-5 + x$
(iii) $6x^2 + 5x^2 - 3$

4. Draw the tree diagram for the given expressions:
(i) $-3xy + 10$
(ii) $x^2 + y^2$

5. Add:
(i) $3x^2y, -5x^2y, -x^2y$
(ii) $a + b - 3, b + 2a - 1$

6. Simplify combining the like terms:
(i) $a - (a - b) - b - (b - a)$
(ii) $x^2 - 3x + y^2 - x - 2y^2$

7. Subtract $3x^2 - 5y - 2$ from $5y - 3x^2 + xy$ and find the value of the result if $x = 2$, $y = -1$.

8. Simplify the following expression and then find the numerical values for $x = -2$:
$-2(-3x + 5) - 2(x + 4)$

EXPONENTS AND POWERS

1. Express the following number as a powers of prime factors:

(i) 144

(ii) 225

2. Express the following in exponential form:

(i) $5 \times 5 \times 5 \times 5 \times 5$

(ii) $a \times a \times a \times b \times c \times c \times c \times d \times d$

3. Express each of the following as product of powers of their prime factors:

(i) 405

(ii) 504

4. Write the following in expanded form:

(i) 70,824

(ii) 1,69,835

5. Find the number from each of the expanded form:

(i) $7 \times 108 + 3 \times 105 + 7 \times 102 + 6 \times 101 + 9$

(ii) $4 \times 107 + 6 \times 103 + 5$

6. Find the value of

(i) $3° \div 4°$

(ii) $(8° – 2°) \div (8° + 2°)$

(iii) $(2° + 3° + 4°) – (4° – 3° – 2°)$

7. Express the following in standard form:

(i) 8,19,00,000

(ii) 5,94,00,00,00,000

(iii) 6892.25

8. Simplify using laws of exponents:

(i) $\frac{3^5 \times 10^5 \times 25^2}{5^7 \times 6^4}$ (ii) $\frac{3^3 \times 2^{10} \times 8^0}{2^7 \times 6^3}$.