

CLASS VII

WORKSHEET NO.7

SUBJECT: MATHEMATICS

Chapter 12 and 10 : Algebraic expressions and practical geometry

Q.1. Identify in the following expressions terms which are not constant and give their numerical coefficients:

- a) $a+b+5$ b) $2x^2y - 3xy^2 + 7$ c) $11-p^2$ d) $13 - p + 5q^2$

Q.2. Write the coefficient of p in the following expressions

- a) $3p - 4q$ b) $7 - p + q$ c) $2r - 4pr$

Q.3. Which of the following pair of terms are like terms and which are unlike

- a) $6x, 11y$ b) $-4pq, 8qp$ c) $2xy, x$ d) $2mn^2, 5n^2m$

Q.4. Classify the following expressions as monomial, binomial or trinomial

- a) $4x - 3y$ b) $2xy$ c) 5 d) $3x + 5y + 7$ e) $a + b$ f) $5x^2 - x - z$

Q.5. Add the following expressions

- a) $x - 3y + 4z, y - 2x - 8z, 5x - 2y - 3z$ b) $5x, 7x, -6x$ c) $mn + 5m - 2, mn + 3$ d) $5x - 2x^2 - 8, 8x^2 - 7x - 9$

Q.6. Subtract:

- a) $-8xy$ from $7xy$ b) $x - y + 3z$ from $2z - x - 3y$ c) $a^2 + b^2 - 2ab$ from $a^2 + b^2 + 2ab$ d) $x^2 - y^2$ from $2x^2 - 3y^2 + 6xy$

Q.7. Subtract:

- a) $2a - 3b + 4c$ from the sum of $a + 3b - 4c, 4a - b + 9c$ and $-2b + 3c - a$

Q.8. What must be added to $5x^3 - 2x^2 + 6x + 7$ to make the sum $x^3 + 3x^2 - x + 1$?

Q.9. What must be subtracted from $a^3 - 4a^2 + 5a - 6$ to obtain $a^2 - 2a + 1$?

Q.10. Simplify:

- a) $2p^3 - 3p^2 + 4p - 5 - 6p^3 + 2p^2 - 8p - 2 + 6p + 8$

- b) $2x^2 - xy + 6x - 4y + 5xy - 4x + 6x^2 + 3y$

- c) $5x^2 - 2x + 7 - 9 + 7x - 3x^2 + 4x^2 - x + 1$

Q.11. If $p = -2, q = -1, r = 3$, find the value of :

- a) $p^2 + q^2 - r^2$ b) $2p^2 - q^2 + 3r^2$

Q.12. a) Write the numerical coefficient of $-6abc$

b) Write the constant term of $3x^2 - 9$

c) Write all the terms of algebraic expression $4x^5 - 6y^4 + 7x^2y - 9$

Q.13. Construct the $\triangle ABC$ in which

a) $BC = 6.2$ cm, $AB = 5$ cm, $AC = 4.3$ cm

b) $AB = 5$ cm, $AC = 4.3$ cm, angle $A = 60^\circ$

c) $BC = 4.8$ cm, angle $B = 60^\circ$, angle $C = 75^\circ$

d) $BC = 5.3$ cm, angle $B = 45^\circ$, angle $A = 75^\circ$

Q.14. Construct a right triangle ABC in which base $BC = 4.8$ cm, Angle $B = 90^\circ$ and $AC = 6.2$ cm

Q.15. Construct a triangle PQR in which $PQ = 3.5$ cm, $QR = 4.2$ cm and angle $Q = 120^\circ$