CLASS VII
SAMPLE PAPER
MATHS (ALGEBRA)

1. Add the following expressions:
   - (a) $p^2 - 9pq - q^2$ and $-4p^2 - 5pq + 2q^2$
   - (b) $2x^3 - x^2y - 2xy^2 - y$ and $4x^3 - x^2y + 3xy^2 + 4y$
   - (c) $ab + bc + ca$ and $-bc - ca - ab$
   - (d) $p^2 - 3q + r$, $q - r + 2p^2$ and $r - 3p^2 + q$
   - (e) $2p^2qr + 3pq^2r + 4pqr^2$ and $-3pq^2r - 2pqr^2 + p^2qr$
   - (f) $ab - bc$, $bc - ca$ and $ca - ab$
   - (g) $x^2 + 3xy - yz$, $y^2 + 3yz - zx$ and $z^2 + 3zx - xy$
2. Subtract
   - (a) $-8p^2qr$ from $-4p^2qr$.
   - (b) $-2a^2 - 3ab$ from $2b^2 + 4ab$.
   - (c) $-4x^2y - 5y^3$ from $3x^3 + 3xy^2 - 2x^2y$.
   - (d) $4x^3 + 3x^3y^3 + 5y^3$ from $2x^3 - 2x^3y^3 + 7y^3$.
   - (e) $ab - bc - ca$ from $-ab + bc + ca$.
   - (f) $-2a^2 - 2b^2$ from $-2a^2 - b^2 + 2ab$.
   - (g) $3x^3y^2 + 3x^2y^2 - 7xy^3$ from $2x^3 + y^3 + 3x^2y^2 - xy^3$.
   - (h) $2(ab + bc + ca)$ from $-ab - 5bc - ca$.
3. Solve
   - (a) What should be added to $x^3 + 3x^2y + 3xy^2 + y^3$ to get $2x^3 + 3y^3$?
   - (b) What should be added to $pq + 5p^2q^2 + p^3$ to get $2p^3 + p^2q^2 + 4pq$?
   - (c) What should be subtracted from $3x^3 - 3x^2y + 4xy^2 + 7y^3$ to get $x^3 - 5x^2y + xy^2 + 4y^3$?

(d) What should be subtracted from $-7mn + 2m^2 + 3n^2$ to get $m^2 + 2mn + n^2$?

(e) How much is $21a^3 - 17a^2$ less than $89a^3 - 64a^2 + 6a + 16$?

(g) How much does $3p^2 - 5p + 4$ exceed $13p^3 - 5p^2 + 7p - 9$?

(h) To what expression must $9x^3 - 3x^2 - x - 4$ be added to make the sum zero?

(i) From the sum of $x^2 - y^2 - 1$, $y^2 - x^2 - 1$ and $1 - x^2 - y^2$subtract $-(1 + y^2)$.

(j) Subtract the sum of $2ab - 7b^2 - 8a^2$ and $9ab + 5b^2 + 7a^2$ from the sum of $12ab + 8b^2$ and $6b^2 - a^2$.

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