ALGEBRAIC EXPRESSIONS AND IDENTITIES

ADDITION AND SUBTRACTION OF ALGEBRAIC EXPRESSIONS

EXERCISE

Q.1 Add : $7x^2 - 4x + 5$, $-3x^2 + 2x - 1$ and $5x^2 - x + 9$.

Q.2 Add : $5x^2 - \frac{1}{3}x + \frac{5}{2}$, $-\frac{1}{2}x^2 + \frac{1}{2}x - \frac{1}{3}$ and $-2x^2 + \frac{1}{5}x - \frac{1}{6}$.

Q.3 Subtract $3pq\,(p - q)$ from $2pq\,(p + q)$

Q.4 Add : (i) $p(p - q)$, $q\,(q - r)$ and $r(r - p)$

(ii) $2x\,(z - x - y)$ and $2y\,(z - y - x)$

Q.5 Simplify each of the following expressions :

(i) $15a^2 - 6a\,(a - 2) + a(3 + 7a)$

(ii) $x^2(1 - 3y^2) + x(xy^2 - 2x) - 3y(y - 4x^2y)$

(iii) $4st(s - t) - 6s^2(t - t^2) - 3t^2(2s^2 - s) + 2st(s - t)$

Q.6 What must be added to $9x^2 - 24x + 10$ to make it a whole square ?

Q.7 Add the following algebraic expressions:

$$2,\ \frac{2y}{3} - \frac{5y^2}{3} + \frac{5y^3}{2},\ -\frac{4}{3} + \frac{2y^2}{3} - \frac{y}{2},\ \frac{5y^3}{3} + 3y^2 + 3y + \frac{6}{5}$$

Q.8 Subtract : $\left(-2y^2 + \frac{1}{2}y - 3\right)$ from $7y^2 - 2y + 10$.

Q.9 Subtract: $\frac{3}{2}x^2y + \frac{4}{5}y - \frac{1}{3}x^2yz$ from $\frac{12}{5}x^2yz - \frac{3}{5}xyz + \frac{2}{3}x^2y$.

ANSWER KEY

1. $9x^2 - 3x + 13$

2. $\frac{5}{2}x^2 + \frac{11}{30}x + 2$

3. $-p^2q + 5pq^2$

4. (i) $p^2 + q^2 + r^2 - pq - qr - rp$

(ii) $2xz - 2x^2 - 4xy + 2yz - 2y^2$

5. (i) $15a^2 - 6a^2 + 7a^2 + 12a + 3a = 16a^2 + 15a$

(ii) $-x^2 + 10x^2y^2 - 3y^2$

(iii) $-3st^2$

6. 6

7. $\frac{28}{15} + \frac{19}{6}y + 2y^2 + \frac{25}{6}y^3$

8. $9y^2 - \frac{5}{2}y + 13$

9. $\frac{41}{15}x^2yz - \frac{5}{6}x^2y - \frac{3}{5}xyz - \frac{4}{5}y$