Addition and Subtraction of Algebraic Expressions

1. **Add the following:**

    A. $\frac{3}{2} a^2b - \frac{1}{2} ab$, $3a^2 b + 2ab$, $-\frac{1}{2} a^2b + \frac{3}{2} ab$

    B. $3x^2 - 8y^2 + 4z^2$, $2y^2 - 5x^2 + 4z^2$, $6y^2 - 9x^2 + 4z^2$

    C. $11x - 5y + 8$ and $9x - 9y + 5$

    D. $15a + 22b - 36c$, $8b + 3a$ and $7a - 8b - 7c$

2. **Subtract the following:**

    A. $x^2 + 2xy + y^2$ from $-x^2 - 2xy + y^2$

    B. $3x - 5z$ from $7x + 9z$

    C. $7a^2 + 8b^2 - 9c^2$ from c

    D. S from $9 + 2a + 5b - c$

3. **Simplify:**

    A. $4a - 10b - (-8a + 4b)$

    B. $9x^2y - 2xy + 5 - (3 - 15xy + 20 \times 2y)$

    C. $6c^2 + 4cd + d^2 - 5c^2 - 2cd + 2 d^2$

    D. $7p + 3q + 10q - 8q$

    E. $6 + [2a - \{3b - (5a + b - 6) + 2a^2 \} - (a^2 - 2ab)]$

    F. $4x^2 z - 5yz + 6xy - \{x^2z - (x^2z - 2yz) - 5yz - 8z\}$

4. **Subtract $6x^2 - 7x + 5$ from the sum of $4x^2 - 5x + 7$ and $8 - 3x^2 - 4x$.**

5. If $A = 4x^2 - 6x - 9$, $B = x^2 + 7x - 4$ and $C = -7x^2 + 4xy - 3y^2$, find:

   A. $A + B - C$

   B. $B + C - A$

   C. $A - B + C$

   D. $A - B - C$

6. From the sum of $5x^2 + 3xy + y^2$ and $-4x^2 - 3y^2$, subtract $x^2 - 5xy + y^2$. Also, write the degree of the resulting expression.

7. Savi earns $15a + 8b$ rupees every month. She spends $3a - 2b$ rupees. How much does she save?

8. Ritvik spends $8a - 3b$ rupees for a shirt, $8a + 3b$ for a trouser and blazer and $2a - 3b$ rupees for a tie. If he had 3500 rupees with him, how much money will he be left with?

9. What must be subtracted from $2p^3 - 2p^2 + 8p - 7$ to obtain $4p^2 - 4p + 8$?

10. How much larger is $15a^2 - 8b^2 + 9ab$ than $4b^2 - 7ab$?