

Табл.4

| №   | Координати векторів $\bar{a}, \bar{b}, \bar{c}, \bar{d}$                                                           | Формування матриць $A$ і $B$                                                                                                        | Операції з векторами $\bar{a}, \bar{b}, \bar{c}, \bar{d}$                                                               | Операції з матрицями $A$ і $B$          | Операції з векторами і матрицями                                 |
|-----|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------------|
| 1.  | $\bar{a} = [1, 1, 1],$<br>$\bar{b} = [6, 6, -11],$<br>$\bar{c} = [1, -6, 11],$<br>$\bar{d} = [-1, 6, 11]$          | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{c} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{d} \\ -\bar{c} \end{bmatrix}$ | $n\bar{a} + \bar{b} - \bar{c}/n$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{b}}$ | $ A $<br>$nA + B$<br>$A^{-1}$<br>$B^T$  | $\bar{a} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |
| 2.  | $\bar{a} = [2, 2, 2],$<br>$\bar{b} = [7, 7, -12],$<br>$\bar{c} = [2, -7, 12],$<br>$\bar{d} = [-2, 7, 12]$          | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ -\bar{d} \\ \bar{c} \end{bmatrix}$ | $n\bar{a} - \bar{b}/n + \bar{c}$<br>$\bar{a} \cdot \bar{c}$<br>$\bar{a} \times \bar{c}$<br>$\widehat{\bar{a}, \bar{c}}$ | $ A $<br>$A - nB$<br>$A^{-1}$<br>$B^T$  | $\bar{b} \cdot A$<br>$ A  \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$ |
| 3.  | $\bar{a} = [3, 3, 3],$<br>$\bar{b} = [8, 8, -13],$<br>$\bar{c} = [3, -8, 13],$<br>$\bar{d} = [-3, 8, 13]$          | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ \bar{d} \\ \bar{a} \end{bmatrix}$  | $n\bar{a} + \bar{d} - \bar{c}$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{c}, \bar{b}}$   | $ A $<br>$A + B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{c} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |
| 4.  | $\bar{a} = [4, 4, 4],$<br>$\bar{b} = [9, 9, -14],$<br>$\bar{c} = [4, -9, 14],$<br>$\bar{d} = [-4, 9, 14]$          | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{b} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{b} \\ -\bar{d} \end{bmatrix}$ | $n\bar{a} - \bar{b} + \bar{c}/n$<br>$\bar{c} \cdot \bar{d}$<br>$\bar{d} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{d}}$ | $ A $<br>$A - B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{d} \cdot A$<br>$ A  \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$ |
| 5.  | $\bar{a} = [5, 5, 5],$<br>$\bar{b} = [10, 10, -15],$<br>$\bar{c} = [5, -10, 15],$<br>$\bar{d} = [-5, 10, 15]$      | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{c} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{d} \\ -\bar{c} \end{bmatrix}$ | $n\bar{a} + \bar{b} - \bar{c}/n$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{b}}$ | $ A $<br>$nA + B$<br>$A^{-1}$<br>$B^T$  | $\bar{a} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |
| 6.  | $\bar{a} = [6, 6, 6],$<br>$\bar{b} = [11, 11, -16],$<br>$\bar{c} = [6, -11, 16],$<br>$\bar{d} = [-6, 11, 16]$      | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ -\bar{d} \\ \bar{c} \end{bmatrix}$ | $n\bar{a} - \bar{b}/n + \bar{c}$<br>$\bar{a} \cdot \bar{c}$<br>$\bar{a} \times \bar{c}$<br>$\widehat{\bar{a}, \bar{c}}$ | $ A $<br>$A - nB$<br>$A^{-1}$<br>$B^T$  | $\bar{b} \cdot A$<br>$ A  \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$ |
| 7.  | $\bar{a} = [7, 7, 7],$<br>$\bar{b} = [12, 12, -17],$<br>$\bar{c} = [7, -12, 17],$<br>$\bar{d} = [-7, 12, 17]$      | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ \bar{d} \\ \bar{a} \end{bmatrix}$  | $n\bar{a} + \bar{d} - \bar{c}$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{c}, \bar{b}}$   | $ A $<br>$A + B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{c} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |
| 8.  | $\bar{a} = [8, 8, 8],$<br>$\bar{b} = [13, 13, -18],$<br>$\bar{c} = [8, -13, 18],$<br>$\bar{d} = [-8, 13, 18]$      | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{b} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{b} \\ -\bar{d} \end{bmatrix}$ | $n\bar{a} - \bar{b} + \bar{c}/n$<br>$\bar{c} \cdot \bar{d}$<br>$\bar{d} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{d}}$ | $ A $<br>$A - B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{d} \cdot A$<br>$ A  \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$ |
| 9.  | $\bar{a} = [9, 9, 9],$<br>$\bar{b} = [14, 14, -19],$<br>$\bar{c} = [9, -9, 19],$<br>$\bar{d} = [-9, 19, 19]$       | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{c} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{d} \\ -\bar{c} \end{bmatrix}$ | $n\bar{a} + \bar{b} - \bar{c}/n$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{b}}$ | $ A $<br>$nA + B$<br>$A^{-1}$<br>$B^T$  | $\bar{a} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |
| 10. | $\bar{a} = [10, 10, 10],$<br>$\bar{b} = [15, 15, -20],$<br>$\bar{c} = [10, -15, 20],$<br>$\bar{d} = [-10, 15, 20]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ -\bar{d} \\ \bar{c} \end{bmatrix}$ | $n\bar{a} - \bar{b}/n + \bar{c}$<br>$\bar{a} \cdot \bar{c}$<br>$\bar{a} \times \bar{c}$<br>$\widehat{\bar{a}, \bar{c}}$ | $ A $<br>$A - nB$<br>$A^{-1}$<br>$B^T$  | $\bar{b} \cdot A$<br>$ A  \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$ |
| 11. | $\bar{a} = [11, 11, 11],$<br>$\bar{b} = [16, 16, -21],$<br>$\bar{c} = [11, -16, 21],$<br>$\bar{d} = [-11, 16, 21]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ \bar{d} \\ \bar{a} \end{bmatrix}$  | $n\bar{a} + \bar{d} - \bar{c}$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{c}, \bar{b}}$   | $ A $<br>$A + B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{c} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |

|     |                                                                                                                    |                                                                                                                                     |                                                                                                                         |                                         |                                                                  |
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| 12. | $\bar{a} = [12, 12, 12],$<br>$\bar{b} = [17, 17, -22],$<br>$\bar{c} = [12, -17, 22],$<br>$\bar{d} = [-12, 17, 22]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{b} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{b} \\ -\bar{d} \end{bmatrix}$ | $n\bar{a} - \bar{b} + \bar{c}/n$<br>$\bar{c} \cdot \bar{d}$<br>$\bar{d} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{d}}$ | $ A $<br>$A - B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{d} \cdot A$<br>$ A  \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$ |
| 13. | $\bar{a} = [13, 13, 13],$<br>$\bar{b} = [18, 18, -23],$<br>$\bar{c} = [13, -18, 23],$<br>$\bar{d} = [-13, 18, 23]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{c} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{d} \\ -\bar{c} \end{bmatrix}$ | $n\bar{a} + \bar{b} - \bar{c}/n$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{b}}$ | $ A $<br>$nA + B$<br>$A^{-1}$<br>$B^T$  | $\bar{a} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |
| 14. | $\bar{a} = [14, 14, 14],$<br>$\bar{b} = [19, 19, -24],$<br>$\bar{c} = [14, -19, 24],$<br>$\bar{d} = [-14, 19, 24]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ -\bar{d} \\ \bar{c} \end{bmatrix}$ | $n\bar{a} - \bar{b}/n + \bar{c}$<br>$\bar{a} \cdot \bar{c}$<br>$\bar{a} \times \bar{c}$<br>$\widehat{\bar{a}, \bar{c}}$ | $ A $<br>$A - nB$<br>$A^{-1}$<br>$B^T$  | $\bar{b} \cdot A$<br>$ A  \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$ |
| 15. | $\bar{a} = [15, 15, 15],$<br>$\bar{b} = [20, 20, -25],$<br>$\bar{c} = [20, -15, 25],$<br>$\bar{d} = [-15, 20, 25]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ \bar{d} \\ \bar{a} \end{bmatrix}$  | $n\bar{a} + \bar{d} - \bar{c}$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{c}, \bar{b}}$   | $ A $<br>$A + B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{c} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |
| 16. | $\bar{a} = [16, 16, 16],$<br>$\bar{b} = [21, 21, -26],$<br>$\bar{c} = [21, -16, 26],$<br>$\bar{d} = [-16, 21, 26]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{b} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{b} \\ -\bar{d} \end{bmatrix}$ | $n\bar{a} - \bar{b} + \bar{c}/n$<br>$\bar{c} \cdot \bar{d}$<br>$\bar{d} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{d}}$ | $ A $<br>$A - B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{d} \cdot A$<br>$ A  \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$ |
| 17. | $\bar{a} = [17, 17, 17],$<br>$\bar{b} = [22, 22, -27],$<br>$\bar{c} = [22, -17, 27],$<br>$\bar{d} = [-17, 22, 27]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{c} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{d} \\ -\bar{c} \end{bmatrix}$ | $n\bar{a} + \bar{b} - \bar{c}/n$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{b}}$ | $ A $<br>$nA + B$<br>$A^{-1}$<br>$B^T$  | $\bar{a} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |
| 18. | $\bar{a} = [18, 18, 18],$<br>$\bar{b} = [23, 23, -28],$<br>$\bar{c} = [23, -18, 28],$<br>$\bar{d} = [-18, 23, 28]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ -\bar{d} \\ \bar{c} \end{bmatrix}$ | $n\bar{a} - \bar{b}/n + \bar{c}$<br>$\bar{a} \cdot \bar{c}$<br>$\bar{a} \times \bar{c}$<br>$\widehat{\bar{a}, \bar{c}}$ | $ A $<br>$A - nB$<br>$A^{-1}$<br>$B^T$  | $\bar{b} \cdot A$<br>$A \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$   |
| 19. | $\bar{a} = [19, 19, 19],$<br>$\bar{b} = [24, 24, -29],$<br>$\bar{c} = [24, -19, 29],$<br>$\bar{d} = [-19, 24, 29]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ \bar{d} \\ \bar{a} \end{bmatrix}$  | $n\bar{a} + \bar{d} - \bar{c}$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{c}, \bar{b}}$   | $ A $<br>$A + B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{c} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |
| 20. | $\bar{a} = [20, 20, 20],$<br>$\bar{b} = [25, 25, -30],$<br>$\bar{c} = [25, -20, 30],$<br>$\bar{d} = [-20, 25, 30]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{b} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{b} \\ -\bar{d} \end{bmatrix}$ | $n\bar{a} - \bar{b} + \bar{c}/n$<br>$\bar{c} \cdot \bar{d}$<br>$\bar{d} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{d}}$ | $ A $<br>$A - B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{d} \cdot A$<br>$B \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$   |
| 21. | $\bar{a} = [21, 21, 21],$<br>$\bar{b} = [26, 26, -31],$<br>$\bar{c} = [31, -26, 31],$<br>$\bar{d} = [-21, 26, 31]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{c} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{d} \\ -\bar{c} \end{bmatrix}$ | $n\bar{a} + \bar{b} - \bar{c}/n$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{b}}$ | $ A $<br>$nA + B$<br>$A^{-1}$<br>$B^T$  | $\bar{a} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |
| 22. | $\bar{a} = [22, 22, 22],$<br>$\bar{b} = [27, 27, -32],$<br>$\bar{c} = [22, -27, 32],$<br>$\bar{d} = [-22, 27, 32]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{b} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ -\bar{d} \\ \bar{c} \end{bmatrix}$ | $n\bar{a} - \bar{b}/n + \bar{c}$<br>$\bar{a} \cdot \bar{c}$<br>$\bar{a} \times \bar{c}$<br>$\widehat{\bar{a}, \bar{c}}$ | $ A $<br>$A - nB$<br>$A^{-1}$<br>$B^T$  | $\bar{b} \cdot A$<br>$ A  \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$ |
| 23. | $\bar{a} = [23, 23, 23],$<br>$\bar{b} = [28, 28, -33],$<br>$\bar{c} = [23, -28, 33],$<br>$\bar{d} = [-23, 28, 33]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{d} \end{bmatrix}, B = \begin{bmatrix} \bar{b} \\ \bar{d} \\ \bar{a} \end{bmatrix}$  | $n\bar{a} + \bar{d} - \bar{c}$<br>$\bar{a} \cdot \bar{b}$<br>$\bar{a} \times \bar{b}$<br>$\widehat{\bar{c}, \bar{b}}$   | $ A $<br>$A + B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{c} \cdot A$<br>$ A  \cdot \bar{b}$<br>$X = A^{-1} \bar{d}$ |

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| 24. | $\bar{a} = [24, 24, 24],$<br>$\bar{b} = [29, 29, -34],$<br>$\bar{c} = [24, -29, 34],$<br>$\bar{d} = [-24, 29, 34]$ | $A = \begin{bmatrix} \bar{a} \\ \bar{c} \\ \bar{b} \end{bmatrix}, B = \begin{bmatrix} \bar{a} \\ \bar{b} \\ -\bar{d} \end{bmatrix}$ | $n\bar{a} - \bar{b} + \bar{c}/n$<br>$\bar{c} \cdot \bar{d}$<br>$\bar{d} \times \bar{b}$<br>$\widehat{\bar{a}, \bar{d}}$ | $ A $<br>$A - B/n$<br>$A^{-1}$<br>$B^T$ | $\bar{d} \cdot A$<br>$ A  \cdot \bar{c}$<br>$X = A^{-1} \bar{d}$ |
|-----|--------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------------------------|