Dati i vettori di $\mathbb{R}^4$

$$a = \begin{pmatrix} 1 \\ 0 \\ 2 \\ 4 \end{pmatrix}, \quad b = \begin{pmatrix} 0 \\ 5 \\ 3 \\ 1 \end{pmatrix}, \quad c = \begin{pmatrix} 1 \\ 0 \\ 0 \\ 2 \end{pmatrix}, \quad d = \begin{pmatrix} 1 \\ 2 \\ 0 \\ 1 \end{pmatrix},$$

calcolare

$$dx_3(a), \quad dx_4(b), \quad dx_{1,3}(a,c), \quad dx_{4,2}(b,d), \quad dx_{1,1}(a,c), \quad dx_{1,2}(b,b),$$

$$dx_{1,2,3}(a,b,d), \quad dx_{1,3,4}(c,a,b), \quad dx_{1,2,3,4}(a,b,c,d)$$

Data $\varphi = dx_{1,4} + 5dx_{2,6}$, calcolare

$$\varphi(a,c), \quad \varphi(b,c)$$

Dati i vettori di $\mathbb{R}^6$

$$a = \begin{pmatrix} 1 \\ 0 \\ 2 \\ 4 \\ 0 \\ 1 \end{pmatrix}, \quad b = \begin{pmatrix} 0 \\ 5 \\ 3 \\ 1 \\ 1 \\ 0 \end{pmatrix}, \quad c = \begin{pmatrix} 1 \\ 0 \\ 0 \\ 2 \\ 1 \\ 1 \end{pmatrix}, \quad d = \begin{pmatrix} 1 \\ 2 \\ 0 \\ 1 \\ 1 \\ 2 \end{pmatrix},$$

calcolare

$$dx_{1,3,6}(a,b,d), \quad dx_{1,3,3}(a,b,d), \quad dx_{6,3,1}(a,b,d), \quad dx_{1,6,3}(a,b,d),$$
$$dx_{1,3,6}(b,a,d), \quad dx_{1,3,6}(a,b,a), \quad dx_{6,3,1}(b,a,d), \quad dx_{1,6,3}(d,b,a),$$
$$dx_{2,5}(a,c), \quad dx_{1,4}(b,d), \quad dx_{4,5}(a,d), \quad dx_{3,6}(b,c),$$
$$dx_{2,5}(a,c) + 3dx_{1,4}(b,d) - 2dx_{4,5}(a,d) + dx_{3,6}(b,c)$$

Data $\varphi = 3dx_{1,5} - 2dx_{2,6}$, calcolare

$$2\varphi(a,c) - \varphi(b,c) + \varphi(d,c), \qquad \varphi(2a - b + d, c)$$

e verificare che i valori coincidono.