

Součin matic

ZADÁNÍ

$$\text{a) } A = \begin{pmatrix} 1 & 2 & 3 \\ 2 & 1 & 2 \\ 3 & 3 & 3 \end{pmatrix}, B = \begin{pmatrix} 0 & 2 & 3 \\ 2 & 1 & 2 \\ 3 & 3 & 3 \end{pmatrix}$$

$$\text{b) } A = \begin{pmatrix} 2 & 4 & -3 \\ 0 & 1 & 2 \\ 5 & 4 & 8 \end{pmatrix}, B = \begin{pmatrix} 0 & 1 & 4 \\ 2 & 0 & -2 \\ 1 & 0 & 3 \end{pmatrix}$$

$$\text{c) } A = \begin{pmatrix} 8 & -2 & 3 \\ 0 & 10 & -4 \\ 2 & 1 & 0 \end{pmatrix}, B = \begin{pmatrix} -4 & -9 & 2 \\ 8 & 3 & -7 \\ 1 & 0 & -1 \end{pmatrix}$$

$$\text{d) } A = \begin{pmatrix} 0 & 2 & 3 \\ 2 & 1 & 2 \\ 0 & 1 & 3 \end{pmatrix}, B = \begin{pmatrix} -1 & 0 & 2 \\ 1 & 3 & 1 \\ 1 & 0 & 2 \end{pmatrix}$$

$$\text{e) } A = \begin{pmatrix} -1 & 0 & 2 \\ 8 & 3 & -1 \\ 1 & 0 & -1 \end{pmatrix}, B = \begin{pmatrix} 0 & 2 & 3 \\ 2 & 1 & 2 \\ 0 & 1 & 3 \end{pmatrix}$$

ŘEŠENÍ

$$A \cdot B = \begin{pmatrix} 13 & 13 & 16 \\ 8 & 11 & 14 \\ 15 & 18 & 24 \end{pmatrix}$$

$$A \cdot B = \begin{pmatrix} 5 & 2 & -9 \\ 4 & 0 & 4 \\ 16 & 5 & 36 \end{pmatrix}$$

$$A \cdot B = \begin{pmatrix} -45 & -78 & 27 \\ 76 & 30 & -66 \\ 0 & -15 & -3 \end{pmatrix}$$

$$A \cdot B = \begin{pmatrix} 5 & 6 & 8 \\ 1 & 3 & 9 \\ 4 & 3 & 7 \end{pmatrix}$$

$$A \cdot B = \begin{pmatrix} 0 & 0 & 3 \\ 6 & 18 & 27 \\ 0 & 1 & 0 \end{pmatrix}$$

Determinant matice 3×3

ZADÁNÍ

$$\text{a) } A = \begin{pmatrix} -1 & 0 & 2 \\ 8 & 3 & -1 \\ 1 & 0 & -1 \end{pmatrix}$$

$$\text{b) } A = \begin{pmatrix} 0 & 2 & 3 \\ 2 & 1 & 2 \\ 0 & 1 & 3 \end{pmatrix}$$

$$\text{c) } A = \begin{pmatrix} 1 & 2 & -3 \\ 2 & 1 & 7 \\ 0 & 2 & -1 \end{pmatrix}$$

$$\text{d) } A = \begin{pmatrix} 2 & 4 & -3 \\ 0 & 1 & 2 \\ 5 & 4 & 8 \end{pmatrix}$$

$$\text{e) } A = \begin{pmatrix} -1 & 0 & 2 \\ 1 & 3 & 1 \\ 1 & 0 & 2 \end{pmatrix}$$

ŘEŠENÍ

$$\det(A) = -3$$

$$\det(A) = -6$$

$$\det(A) = -23$$

$$\det(A) = 55$$

$$\det(A) = -12$$

Determinant matice 4×4

ZADÁNÍ

ŘEŠENÍ

a) $A = \begin{pmatrix} -2 & 0 & 2 & 2 \\ 1 & 3 & 1 & 1 \\ 1 & 0 & 0 & 2 \\ 2 & 5 & 1 & 0 \end{pmatrix}$

$$\det(A) = -8$$

b) $A = \begin{pmatrix} 0 & 1 & 2 & 1 \\ 4 & -3 & 1 & 1 \\ 1 & 7 & 0 & 0 \\ 1 & 4 & -1 & -2 \end{pmatrix}$

$$\det(A) = -92$$

c) $A = \begin{pmatrix} 1 & 2 & 0 & 1 \\ 2 & 1 & 1 & 1 \\ 1 & 0 & 0 & 7 \\ 0 & 1 & 0 & 1 \end{pmatrix}$

$$\det(A) = 8$$

d) $A = \begin{pmatrix} 7 & 7 & 8 & 5 \\ 1 & 3 & 0 & 0 \\ 1 & 0 & 0 & 2 \\ 0 & 9 & 6 & 1 \end{pmatrix}$

$$\det(A) = 54$$

e) $A = \begin{pmatrix} 2 & 10 & 10 & 3 \\ 1 & 3 & 1 & 1 \\ 0 & 1 & 0 & 2 \\ 0 & 9 & 1 & 0 \end{pmatrix}$

$$\det(A) = -139$$

f) $A = \begin{pmatrix} 4 & 3 & 9 & 5 \\ 10 & 2 & 1 & 1 \\ 0 & 1 & 0 & 2 \\ 0 & 2 & 9 & 0 \end{pmatrix}$

$$\det(A) = -290$$