### Inverzna matrica i matrične jednadžbe

Matematika za ekonomiste 1

Damir Horvat

FOI, Varaždin

#### Sadržaj

prvi zadatak

drugi zadatak

treći zadatak

četvrti zadatak

peti zadatak

• Inverzna matrica kvadratne matrice A je matrica  $A^{-1}$  za koju vrijedi

$$AA^{-1} = A^{-1}A = I$$

 Inverzna matrica kvadratne matrice A je matrica A<sup>-1</sup> za koju vrijedi

$$AA^{-1} = A^{-1}A = I$$

 Formula za određivanje inverzne matrice

$$A^{-1} = \frac{1}{\det A} \cdot A^*$$

 Inverzna matrica kvadratne matrice A je matrica A<sup>-1</sup> za koju vrijedi

$$AA^{-1} = A^{-1}A = I$$

 Formula za određivanje inverzne matrice

$$A^{-1} = \frac{1}{\det A} \cdot A^*$$

 Inverzna matrica kvadratne matrice A je matrica A<sup>-1</sup> za koju vrijedi

$$AA^{-1} = A^{-1}A = I$$

 Formula za određivanje inverzne matrice

$$A^{-1} = \frac{1}{\det A} \cdot A^*$$
adjunkta matrice  $A$ 

 Inverzna matrica kvadratne matrice A je matrica A<sup>-1</sup> za koju vrijedi

$$AA^{-1} = A^{-1}A = I$$

 Formula za određivanje inverzne matrice

$$A^{-1} = \frac{1}{\det A} \cdot A^*$$
adjunkta matrice  $A$ 

$$A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$$

 Inverzna matrica kvadratne matrice A je matrica A<sup>-1</sup> za koju vrijedi

$$AA^{-1} = A^{-1}A = I$$

 Formula za određivanje inverzne matrice

$$A^{-1} = \frac{1}{\det A} \cdot A^*$$
adjunkta matrice  $A$ 

$$A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$$

$$A^* = \begin{bmatrix} A_{11} & A_{12} & A_{13} \\ A_{21} & A_{22} & A_{23} \\ A_{31} & A_{32} & A_{33} \end{bmatrix}^T$$

 Inverzna matrica kvadratne matrice A je matrica  $A^{-1}$  za koju vrijedi

$$AA^{-1} = A^{-1}A =$$

 Formula za određivanje inverzne matrice

$$A^{-1} = \frac{1}{\det A} \cdot A^*$$
adjunkta matrice  $A$ 

rice 
$$A$$
 je matrica  $A^{-1}$  za vrijedi 
$$A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$$
 mula za određivanje rzne matrice 
$$A^{-1} = \frac{1}{\det A} \cdot A^*$$
 
$$A^* = \begin{bmatrix} A_{11} & A_{12} & A_{13} \\ A_{21} & A_{22} & A_{23} \\ A_{31} & A_{32} & A_{33} \end{bmatrix}^T$$

 Inverzna matrica kvadratne matrice A je matrica  $A^{-1}$  za koju vrijedi

$$AA^{-1} = A^{-1}A = I$$

 Formula za određivanje inverzne matrice

$$A^{-1} = \frac{1}{\det A} \cdot A^*$$
adjunkta matrice  $A$ 

kvadratna matrica reda 3

Taa 
$$A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$$

$$A^* = \begin{bmatrix} A_{11} & A_{12} & A_{13} \\ A_{21} & A_{22} & A_{23} \\ A_{31} & A_{32} & A_{33} \end{bmatrix}^T$$

$$A^* = \begin{bmatrix} A_{11} & A_{12} & A_{13} \\ A_{21} & A_{22} & A_{23} \\ A_{31} & A_{32} & A_{33} \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

 Inverzna matrica kvadratne matrice A je matrica  $A^{-1}$  za koju vrijedi

$$AA^{-1} = A^{-1}A = I$$

 Formula za određivanje inverzne matrice

$$A^{-1} = \frac{1}{\det A} \cdot A^*$$

adjunkta matrice A

kvadratna matrica reda 3

za
$$A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$$

$$A^* = \begin{bmatrix} A_{11} & A_{12} & A_{13} \\ A_{21} & A_{22} & A_{23} \\ A_{31} & A_{32} & A_{33} \end{bmatrix}^T$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix} \quad A^* = \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

prvi zadatak

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

#### Rješenje

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

#### Rješenje

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{vmatrix} 3 & 5 \\ 1 & -3 \end{vmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

Rješenje

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{vmatrix} 3 & 5 \\ 1 & -3 \end{vmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

### Rješenje

a)  $\det A =$ 

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

#### Rješenje

a)  $\det A = 2 \cdot 4$ 

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{vmatrix} 3 & 5 \\ 1 & -3 \end{vmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

#### Rješenje

a)  $\det A = 2 \cdot 4 - 1$ 

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

#### Rješenje

a)  $\det A = 2 \cdot 4 - (-5) \cdot 1$ 

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

#### Rješenje

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

# Rješenje

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

### Rješenje

$$A^{-1} =$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

## Rješenje

$$A^{-1} = \frac{1}{13}$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

## Rješenje

$$A^{-1}=rac{1}{13}\left[ 
ight]$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

### Rješenje

$$A^{-1}=rac{1}{13}\left[ egin{matrix} 4 & & \end{matrix} 
ight]$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

### Rješenje

$$A^{-1}=rac{1}{13}egin{bmatrix}4&&&\&2&\end{bmatrix}$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

### Rješenje

$$A^{-1} = \frac{1}{13} \begin{bmatrix} 4 \\ 5 \end{bmatrix}$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

### Rješenje

$$A^{-1} = \frac{1}{13} \begin{bmatrix} 4 & -1 \\ 5 & 2 \end{bmatrix}$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

#### Rješenje

a)  $\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$ 

$$A^{-1} = rac{1}{13} egin{bmatrix} 4 & -1 \ 5 & 2 \end{bmatrix}$$

 $(kA)^{-1} = k^{-1}A^{-1}$ 

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

### Rješenje

$$\mathcal{A}^{-1}=rac{1}{13}egin{bmatrix}4 & -1\5 & 2\end{bmatrix}$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

$$^{-1} =$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

## Rješenje

a

a) 
$$\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$$

$$A^{-1} = \frac{1}{13} \begin{bmatrix} 4 & -1 \\ 5 & 2 \end{bmatrix}$$

 $(kA)^{-1} = k^{-1}A^{-1}$ 

$$B^{-1} = \left(\frac{2}{3}\right)^{-1}$$

2/14

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

# Rješenje

a

a) 
$$\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$$

$$A^{-1} = \frac{1}{13} \begin{bmatrix} 4 & -1 \\ 5 & 2 \end{bmatrix}$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

$$B^{-1} = \left(\frac{2}{3}\right)^{-1} \cdot$$

2/14

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

# Rješenje

a)  $\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$ 

 $A^{-1} = \frac{1}{13} \begin{vmatrix} 4 & -1 \\ 5 & 2 \end{vmatrix}$ 

 $B^{-1} = \left(\frac{2}{3}\right)^{-1} \cdot \begin{vmatrix} 3 & 5 \\ 1 & -3 \end{vmatrix}^{-1}$ 

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

# Rješenje

a

a)  $\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$ 

$$A^{-1} = \frac{1}{13} \begin{bmatrix} 4 & -1 \\ 5 & 2 \end{bmatrix}$$

 $(kA)^{-1} = k^{-1}A^{-1}$ 

$$B^{-1} = \left(\frac{2}{3}\right)^{-1} \cdot \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}^{-1} =$$

 $\begin{bmatrix} 1 & -3 \end{bmatrix}$ 

$$=\frac{3}{2}$$
.

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

$$A^{-1}=rac{1}{13}egin{bmatrix} 4 & -1 \ 5 & 2 \end{bmatrix}$$

$$B^{-1} = \begin{pmatrix} 2 \\ \overline{3} \end{pmatrix}^{-1} \cdot \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}^{-1} =$$

$$=\frac{3}{2}\cdot\frac{1}{-14}$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

## Rješenje

a

a)  $\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$ 

$$A^{-1} = \frac{1}{13} \begin{bmatrix} 4 & -1 \\ 5 & 2 \end{bmatrix}$$

 $(kA)^{-1} = k^{-1}A^{-1}$ 

$$B^{-1} = \left(\frac{2}{3}\right)^{-1} \cdot \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}^{-1} =$$

$$=\frac{3}{2}\cdot\frac{1}{-14}$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

# Rješenje

a) 
$$\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

$$B^{-1} = \begin{pmatrix} 2 \\ \overline{3} \end{pmatrix}^{-1} \cdot \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}^{-1} =$$

 $A^{-1} = \frac{1}{13} \begin{vmatrix} 4 & -1 \\ 5 & 2 \end{vmatrix}$ 

$$=\frac{3}{2}\cdot\frac{1}{-14}\left[-3\right]$$

$$\begin{bmatrix} -3 \end{bmatrix}$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

 $A = \begin{vmatrix} a & b \\ c & d \end{vmatrix}$ 

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

Rješenje

a)  $\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$ 

 $A^{-1} = \frac{1}{13} \begin{vmatrix} 4 & -1 \\ 5 & 2 \end{vmatrix}$ 

 $B^{-1} = \begin{pmatrix} \frac{2}{3} \end{pmatrix}^{-1} \cdot \begin{vmatrix} 3 & 5 \\ 1 & -3 \end{vmatrix}^{-1} =$ 

 $=\frac{3}{2}\cdot\frac{1}{-14}\begin{vmatrix} -3\\ & 3\end{vmatrix}$ 

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

# Rješenje

a)  $\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$ 

$$A^{-1} = \frac{1}{13} \begin{bmatrix} 4 & -1 \\ 5 & 2 \end{bmatrix}$$

$$B^{-1} = \left(\frac{2}{3}\right)^{-1} \cdot \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}^{-1} =$$

$$=\frac{3}{2}\cdot\frac{1}{-14}\begin{bmatrix}-3\\-1&3\end{bmatrix}$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

$$A^{-1} = \frac{1}{\det A} \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$$

# Rješenje

a)  $\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$ 

$$A^{-1} = \frac{1}{13} \begin{bmatrix} 4 & -1 \\ 5 & 2 \end{bmatrix}$$

 $(kA)^{-1} = k^{-1}A^{-1}$ 

$$B^{-1}=\left(rac{2}{3}
ight)^{-1}\cdot egin{bmatrix} 3 & 5 \ 1 & -3 \end{bmatrix}^{-1}=$$

$$=\frac{3}{2}\cdot\frac{1}{-14}\begin{bmatrix}-3 & -5\\ -1 & 3\end{bmatrix}$$

# Odredite inverzne matrice

Zadatak 1

sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

b)  $B = \frac{2}{3} \begin{vmatrix} 3 & 5 \\ 1 & -3 \end{vmatrix}$ 

 $A = \begin{vmatrix} a & b \\ c & d \end{vmatrix}$ 

$$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

 $A^{-1} = \frac{1}{\det A} \begin{vmatrix} d & -b \\ -c & a \end{vmatrix}$ 

a) 
$$\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$$

Rješenje

 $(kA)^{-1} = k^{-1}A^{-1}$ 

$$\begin{vmatrix} \cdot & 0 \\ 1 \end{vmatrix}$$

 $A^{-1} = \frac{1}{13} \begin{vmatrix} 4 & -1 \\ 5 & 2 \end{vmatrix}$ 

$$\begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

$$B^{-1} = \left(\frac{2}{3}\right)^{-1} \cdot \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}^{-1} =$$

$$= \frac{3}{2} \cdot \frac{1}{-14} \begin{bmatrix} -3 & -5 \\ -1 & 3 \end{bmatrix} =$$

Odredite inverzne matrice sljedećih matrica:

a) 
$$A = \begin{bmatrix} 2 & 1 \\ -5 & 4 \end{bmatrix}$$

 $A = \begin{vmatrix} a & b \\ c & d \end{vmatrix}$ 

 $A^{-1} = \frac{1}{\det A} \begin{vmatrix} d & -b \\ -c & a \end{vmatrix}$ 

b) 
$$B = \frac{2}{3} \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}$$

# b) $(kA)^{-1} = k^{-1}A^{-1}$

Rješenje

$$B^{-1} = \begin{pmatrix} \frac{2}{3} \end{pmatrix}^{-1} \cdot \begin{bmatrix} 3 & 5 \\ 1 & -3 \end{bmatrix}^{-1} =$$

$$\left(\frac{1}{3}\right)^{-1}$$
.

 $= -\frac{3}{28} \begin{vmatrix} -3 & -5 \\ -1 & 3 \end{vmatrix}$ 

a)  $\det A = 2 \cdot 4 - (-5) \cdot 1 = 8 + 5 = 13$ 

 $A^{-1} = \frac{1}{13} \begin{vmatrix} 4 & -1 \\ 5 & 2 \end{vmatrix}$ 

$$\begin{bmatrix} 3 & 5 \\ 1 & - \end{bmatrix}$$

$$\begin{bmatrix} 5 \\ -3 \end{bmatrix}^{-1} =$$

$$\begin{bmatrix} -3 \end{bmatrix}$$

$$\begin{bmatrix} 3 & -5 \\ 1 & 3 \end{bmatrix} =$$

$$= \frac{3}{2} \cdot \frac{1}{-14} \begin{bmatrix} -3 & -5 \\ -1 & 3 \end{bmatrix} =$$

$$\begin{bmatrix} 1 & -3 \end{bmatrix}$$
 $\begin{bmatrix} -3 & -5 \end{bmatrix}$ 

$$\begin{bmatrix} -3 & -5 \end{bmatrix}$$

2/14

# drugi zadatak ——

Odredite inverznu matricu matrice

$$A = \frac{5}{3} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}.$$

Odredite inverznu matricu matrice

$$A = \frac{5}{3} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}.$$

$$A^{-1} =$$

Odredite inverznu matricu matrice

$$A = \frac{5}{3} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}.$$

$$A^{-1} =$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

Odredite inverznu matricu matrice

$$A = \frac{5}{3} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}.$$

$$A^{-1} = \left(\frac{5}{3}\right)^{-1}$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

Odredite inverznu matricu matrice

$$A = \frac{5}{3} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}.$$

$$A^{-1} = \left(\frac{5}{3}\right)^{-1} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}^{-1}$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

Odredite inverznu matricu matrice

$$A = \frac{5}{3} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}.$$

$$A^{-1} = \left(\frac{5}{3}\right)^{-1} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}^{-1} = \frac{3}{5}$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

Odredite inverznu matricu matrice

$$A = \frac{5}{3} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}.$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}$$

$$A^{-1} = \left(\frac{5}{3}\right)^{-1} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}^{-1} = \frac{3}{5}B^{-1}$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

Odredite inverznu matricu matrice

$$A = \frac{5}{3} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}.$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}$$

$$A^{-1} = \left(\frac{5}{3}\right)^{-1} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}^{-1} = \frac{3}{5}B^{-1}$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

Odredite inverznu matricu matrice

$$A = \frac{5}{3} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}.$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}$$

 $\det B =$ 

$$A^{-1} = \left(\frac{5}{3}\right)^{-1} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}^{-1} = \frac{3}{5}B^{-1}$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

Odredite inverznu matricu matrice

$$A = \frac{5}{3} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}.$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}$$

 $\det B = \begin{vmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{vmatrix}$ 

$$A^{-1} = \left(\frac{5}{3}\right)^{-1} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}^{-1} = \frac{3}{5}B^{-1}$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

Odredite inverznu matricu matrice

$$A = \frac{5}{3} \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}.$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}$$

 $\det B = \begin{vmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{vmatrix} = -138$ 

$$A^{-1} = \left(\frac{5}{3}\right)^{-1} \begin{vmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{vmatrix}^{-1} = \frac{3}{5}B^{-1}$$

$$(kA)^{-1} = k^{-1}A^{-1}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}$$

$$A_{ij} = (-1)^{i+j} M_{ij}$$

 $B_{11} =$ 

$$B = \begin{bmatrix} 5 & 8 \\ 3 & -1 \\ -5 & -9 \end{bmatrix}$$

$$A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix}$$

$$B = \begin{bmatrix} 5 & 8 \\ 3 & -1 \\ -5 & -9 \end{bmatrix}$$

$$A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}$$

$$A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} =$$

$$B = \begin{bmatrix} \frac{1}{2} & \frac{8}{2} \\ 2 & -1 \\ 4 & -5 & -9 \end{bmatrix}$$

$$A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix}$$

$$B = \begin{bmatrix} \frac{1}{2} & \frac{1}{8} \\ 2 & -1 \\ 4 & -5 & -9 \end{bmatrix}$$

$$A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \ 4 & -9 \end{vmatrix} = 14$$

 $B_{13} =$ 

/ 14

$$B = \begin{bmatrix} 1 & 5 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}$$

$$A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix}$$

$$B = \begin{bmatrix} 1 & 5 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix}$$

$$A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

$$B_{21} =$$

$$B = \begin{bmatrix} 5 & 8 \\ 3 & 1 \\ -5 & -9 \end{bmatrix}$$

$$A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

$$B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix}$$

$$B = \begin{bmatrix} 5 & 8 \\ -3 & 1 \\ -5 & -9 \end{bmatrix}$$

$$A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

$$B_{13} = (-1) + \begin{vmatrix} 4 & -5 \end{vmatrix} = -2.$$

$$B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{22} = \begin{bmatrix} A_{ij} = (-1)^{i+j} M_{ij} \\ A_{ij} = (-1)^{i+j} M_{ij} \end{bmatrix}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B_{12} = (-1)$$
  $\begin{vmatrix} 4 & -9 \end{vmatrix} = 14$ 

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 4 & -5 \end{vmatrix} = -22$$

$$B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$$

$$B = \begin{bmatrix} 1 & 8 \\ 2 & 1 \\ 4 & -5 & -9 \end{bmatrix} \qquad A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix}$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

$$B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$$

$$B = \begin{bmatrix} 1 & 1 & 8 \\ 2 & 1 & 1 \\ 4 & 5 & -9 \end{bmatrix} \qquad \begin{bmatrix} A_{ij} = (-1)^{i+j} M_{ij} \\ B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

$$B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32 \qquad B_{23} =$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

 $B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$ 

 $B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad \frac{A_{ij} = (-1)^{i+j} M_{ij}}{B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$ 

 $B = \begin{bmatrix} 1 & 5 \\ \frac{2}{3} & \frac{3}{4} \\ 4 & -5 \end{bmatrix} \qquad \begin{bmatrix} A_{ij} = (-1)^{i+j} M_{ij} \\ B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$  $B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$   $B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix}$ 

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

 $B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$ 

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

 $B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$ 

 $B = \begin{bmatrix} 1 & 5 \\ \frac{2}{3} & \frac{3}{4} & -5 & - \end{bmatrix}$   $B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$  $B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$   $B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$ 

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

 $B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$ 

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$
  $B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$   $B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$   $B_{31} =$ 

 $B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad \frac{A_{ij} = (-1)^{i+j} M_{ij}}{B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$ 

$$B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$$

 $B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$ 

$$= \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ \hline & 5 & 9 \end{bmatrix}$$

$$B = \begin{bmatrix} 5 & 8 \\ 3 & -1 \\ 5 & 9 \end{bmatrix}$$

$$B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$

$$B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$
  
 $B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$ 

$$B_{31} = (-1)^{3+1} \begin{vmatrix} 5 & 8 \\ 3 & -1 \end{vmatrix}$$

 $B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$ 

$$= \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ \hline & 5 & 9 \end{bmatrix}$$

$$B = \begin{bmatrix} 5 & 8 \\ 3 & -1 \\ 5 & 9 \end{bmatrix} \qquad \begin{bmatrix} A_{ij} = (-1)^{i+j} M_{ij} \\ B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$$
  $B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$ 

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$
  $B_{31} = (-1)^{3+1} \begin{vmatrix} 5 & 8 \\ 3 & -1 \end{vmatrix} = -29$ 

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

$$B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32 \qquad B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14 \qquad B_{31} = (-1)^{3+1} \begin{vmatrix} 5 & 8 \\ 3 & -1 \end{vmatrix} = -29$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$
  $B_{32} =$ 
 $B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$ 

$$B = \begin{bmatrix} 1 & 8 \\ 2 & -1 \\ \hline 4 & 9 \end{bmatrix} \qquad \begin{bmatrix} A_{ij} = (-1)^{i+j} M_{ij} \\ B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32 \qquad B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14 \qquad B_{31} = (-1)^{3+1} \begin{vmatrix} 5 & 8 \\ 3 & -1 \end{vmatrix} = -29$$

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

$$B_{32} = (-1)^{3+2} \begin{vmatrix} 1 & 8 \\ 2 & -1 \end{vmatrix}$$

 $\begin{vmatrix} 4 & -5 \\ B_{21} = (-1)^{2+1} & 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$ 

= 5

$$B = \begin{bmatrix} 1 & 8 \\ 2 & -1 \\ 4 & 9 \end{bmatrix}$$

$$B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32 \qquad B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14 \qquad B_{31} = (-1)^{3+1} \begin{vmatrix} 5 & 8 \\ 3 & -1 \end{vmatrix} = -29$$

$$\begin{vmatrix} 3 \\ -5 \end{vmatrix} = -22$$

$$B_{32} = (-1)^{3+2} \begin{vmatrix} 1 & 8 \\ 2 & -1 \end{vmatrix} = 17$$

 $B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$  $B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$ 

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32 \qquad B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$
  $B_{31} = (-1)^{3+1} \begin{vmatrix} 5 & 8 \\ 3 & -1 \end{vmatrix} = -29$ 

 $B_{12} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$   $B_{32} = (-1)^{3+2} \begin{vmatrix} 1 & 8 \\ 2 & -1 \end{vmatrix} = 17$ 

$$B_{13} = (-1)^{3+3} \begin{vmatrix} 4 & -5 \end{vmatrix} = -22$$

$$B_{32} = (-1)^{3+4} \begin{vmatrix} 2 & -1 \end{vmatrix} = 17$$

$$B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$$

$$B_{33} = (-1)^{3+4} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$$

1/14

$$B = \begin{bmatrix} 1 & 5 \\ 2 & 3 & -1 \\ 4 & 5 \end{bmatrix}$$

$$B = \begin{bmatrix} 1 & 5 \\ 2 & 3 & -1 \\ \hline 4 & 5 & \end{bmatrix} \qquad A_{ij} = (-1)^{i+j} M_{ij}$$

$$B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32 \qquad B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$$

 $B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$ 

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$$

$$B_{31} = (-1)^{3+1} \begin{vmatrix} 5 & 8 \\ 3 & -1 \end{vmatrix} = -29$$

$$\begin{bmatrix} 3 & 1 \\ -2 & 1 \\ 2 & -1 \end{bmatrix} =$$

$$a_3 = (-1)^{1+3} \begin{vmatrix} 2 \\ 4 \end{vmatrix}$$

 $B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$ 

 $B_{32} = (-1)^{3+2} \begin{vmatrix} 1 & 8 \\ 2 & -1 \end{vmatrix} = 17$  $B_{33} = (-1)^{3+3} \begin{vmatrix} 1 & 5 \\ 2 & 3 \end{vmatrix}$ 

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$$

$$B = \begin{bmatrix} 1 & 5 \\ 2 & 3 & -1 \\ 4 & 5 \end{bmatrix}$$

 $A_{ij} = (-1)^{i+j} M_{ij}$   $B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$  $B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32$ 

 $B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$ 

 $B_{31} = (-1)^{3+1} \begin{vmatrix} 5 & 8 \\ 3 & -1 \end{vmatrix} = -29$ 

 $B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14$ 

 $B_{32} = (-1)^{3+2} \begin{vmatrix} 1 & 8 \\ 2 & -1 \end{vmatrix} = 17$ 

 $B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$  $B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$ 

 $B_{33} = (-1)^{3+3} \begin{vmatrix} 1 & 5 \\ 2 & 3 \end{vmatrix} = -7$ 

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{22} = (-1)^{2+2} \begin{vmatrix} 1 & 8 \\ 4 & -9 \end{vmatrix} = -41$$

$$B_{11} = (-1)^{1+1} \begin{vmatrix} 3 & -1 \\ -5 & -9 \end{vmatrix} = -32 \qquad B_{23} = (-1)^{2+3} \begin{vmatrix} 1 & 5 \\ 4 & -5 \end{vmatrix} = 25$$

$$B_{12} = (-1)^{1+2} \begin{vmatrix} 2 & -1 \\ 4 & -9 \end{vmatrix} = 14 \qquad B_{31} = (-1)^{3+1} \begin{vmatrix} 5 & 8 \\ 3 & -1 \end{vmatrix} = -29$$

$$B_{12} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 3 & -1 \end{vmatrix} = 32 \qquad B_{12} = (-1)^{3+2} \begin{vmatrix} 1 & 8 \\ 3 & -1 \end{vmatrix} = -29$$

 $B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22$  $B_{32} = (-1)^{3+2} \begin{vmatrix} 1 & 8 \\ 2 & -1 \end{vmatrix} = 17$ 

$$B_{13} = (-1)^{1+3} \begin{vmatrix} 2 & 3 \\ 4 & -5 \end{vmatrix} = -22 \qquad B_{32} = (-1)^{3+2} \begin{vmatrix} 2 & 3 \\ 2 & -1 \end{vmatrix} = 17$$

$$B_{13} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ 5 & 6 \end{vmatrix} = -22 \qquad B_{13} = (-1)^{3+2} \begin{vmatrix} 2 & 3 \\ 2 & -1 \end{vmatrix} = 17$$

 $B_{21} = (-1)^{2+1} \begin{vmatrix} 5 & 8 \\ -5 & -9 \end{vmatrix} = 5$ 

 $B_{33} = (-1)^{3+3} \begin{vmatrix} 1 & 5 \\ 2 & 3 \end{vmatrix} = -7$ 

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$

$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$

$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$

$$\det B = -138$$

$$B^{-1} =$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

$$B^{-1} = \frac{1}{-138}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

 $B^{-1} = \frac{1}{-138}$ 

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

 $B^{-1} = \frac{1}{-138} \left| \begin{array}{c} -32 \\ \end{array} \right|$ 

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

 $B^{-1} = \frac{1}{-138} \left| \begin{array}{ccc} -32 & 14 \\ & \end{array} \right|$ 

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$

$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$

$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$

$$\det B = -138$$

 $B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ & & & \end{bmatrix}$ 

 $B^{-1} = \frac{1}{\det B} \cdot B^*$ 

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$

$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$

$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$

$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & & & \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$

$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$

$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$

$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & & \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

 $B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix} = -\frac{1}{138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}$ 

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}' = -\frac{1}{138} \begin{bmatrix} -32 \\ 14 \\ -22 \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$

$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$

$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$

$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}' = -\frac{1}{138} \begin{bmatrix} -32 & 5 \\ 14 & -41 \\ -22 & 25 \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$
$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$
$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$
$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}^{T} = -\frac{1}{138} \begin{bmatrix} -32 & 5 & -29 \\ 14 & -41 & 17 \\ -22 & 25 & -7 \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$

$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$

$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$

$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}^{T} = -\frac{1}{138} \begin{bmatrix} -32 & 5 & -29 \\ 14 & -41 & 17 \\ -22 & 25 & -7 \end{bmatrix}$$

$$A^{-1} = \frac{3}{5}B^{-1}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$

$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$

$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$

$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}^{T} = -\frac{1}{138} \begin{bmatrix} -32 & 5 & -29 \\ 14 & -41 & 17 \\ -22 & 25 & -7 \end{bmatrix}$$

$$A^{-1} = \frac{3}{5}B^{-1} = \frac{3}{5}.$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$

$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$

$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$

$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}^{T} = -\frac{1}{138} \begin{bmatrix} -32 & 5 & -29 \\ 14 & -41 & 17 \\ -22 & 25 & -7 \end{bmatrix}$$

$$A^{-1} = \frac{3}{5}B^{-1} = \frac{3}{5} \cdot \frac{-1}{138}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$

$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$

$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$

$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}^{T} = -\frac{1}{138} \begin{bmatrix} -32 & 5 & -29 \\ 14 & -41 & 17 \\ -22 & 25 & -7 \end{bmatrix}$$

$$A^{-1} = \frac{3}{5}B^{-1} = \frac{3}{5} \cdot \frac{-1}{138} \begin{bmatrix} -32 & 5 & -29\\ 14 & -41 & 17\\ -22 & 25 & -7 \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22$$

$$B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25$$

$$B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7$$

$$\det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}^{T} = -\frac{1}{138} \begin{bmatrix} -32 & 5 & -29 \\ 14 & -41 & 17 \\ -22 & 25 & -7 \end{bmatrix}$$

$$A^{-1} = \frac{3}{5}B^{-1} = \frac{3}{5} \cdot \frac{-1}{138} \begin{bmatrix} -32 & 5 & -29\\ 14 & -41 & 17\\ -22 & 25 & -7 \end{bmatrix} = \frac{-1}{230}$$
$$B^{-1} = \frac{1}{\det B} \cdot B^*$$

<del>3 · B\*</del>

$$B = \begin{bmatrix} 1 & 5 & 8 \\ 2 & 3 & -1 \\ 4 & -5 & -9 \end{bmatrix} \qquad B_{11} = -32, \quad B_{12} = 14, \quad B_{13} = -22 \\ B_{21} = 5, \quad B_{22} = -41, \quad B_{23} = 25 \\ B_{31} = -29, \quad B_{32} = 17, \quad B_{33} = -7 \\ \det B = -138$$

$$B^{-1} = \frac{1}{-138} \begin{bmatrix} -32 & 14 & -22 \\ 5 & -41 & 25 \\ -29 & 17 & -7 \end{bmatrix}^{T} = -\frac{1}{138} \begin{bmatrix} -32 & 5 & -29 \\ 14 & -41 & 17 \\ -22 & 25 & -7 \end{bmatrix}$$

$$A^{-1} = \frac{3}{5}B^{-1} = \frac{3}{5} \cdot \frac{-1}{138} \begin{bmatrix} -32 & 5 & -29 \\ 14 & -41 & 17 \\ -22 & 25 & -7 \end{bmatrix} = \frac{-1}{230} \begin{bmatrix} -32 & 5 & -29 \\ 14 & -41 & 17 \\ -22 & 25 & -7 \end{bmatrix}$$

$$B^{-1} = \frac{1}{\det B} \cdot B^{*}$$

5 / 14

## treći zadatak

## Zadatak 3

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det\left(\frac{1}{2}\left(A^{-1}\right)^3\right)$$

b) det 
$$(A^{-1}A^{T})^{-2}$$

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det\left(\frac{1}{2}\left(A^{-1}\right)^3\right)$$

b) 
$$\det (A^{-1}A^{T})^{-2}$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) =$$

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det\left(\frac{1}{2}\left(A^{-1}\right)^3\right)$$

b) 
$$\det (A^{-1}A^T)^{-2}$$

$$\det\left(\frac{1}{2}(A^{-1})^3\right) =$$

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det\left(\frac{1}{2}\left(A^{-1}\right)^3\right)$$

b) 
$$\det (A^{-1}A^T)^{-2}$$

a) 
$$\det\left(\frac{1}{2}\left(A^{-1}\right)^{3}\right) = \left(\frac{1}{2}\right)^{4}$$

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det\left(\frac{1}{2}\left(A^{-1}\right)^3\right)$$

b) 
$$\det (A^{-1}A^T)^{-2}$$

a) 
$$\det\left(\frac{1}{2}\left(A^{-1}\right)^3\right) = \left(\frac{1}{2}\right)^4$$
.

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det\left(\frac{1}{2}\left(A^{-1}\right)^3\right)$$

b) 
$$\det (A^{-1}A^{T})^{-2}$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3$$

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot$$

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3$$

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$
$$= \frac{1}{16} \cdot$$

$$\det(kA) = k^n \det A$$

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$
$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3$$

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det(A^{-1})^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot$$

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3$$

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} =$$

$$\det(kA) = k^n \det A$$

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} = \det (A^{-1}A^T)$$

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det(A^{-1})^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} = (\det (A^{-1}A^T))^{-2}$$

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m \det(AB) = \det A \det B$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} = (\det (A^{-1}A^T))^{-2} = ($$

$$det(kA) = k^n det A$$
 n jet

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m \det(AB) = \det A \det B$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} = (\det (A^{-1}A^T))^{-2} = (\det A^{-1})^{-2}$$

 $det(kA) = k^n det A$  n je red kvadratne matrice A

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m \det(AB) = \det A \det B$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} = (\det (A^{-1}A^T))^{-2} = (\det A^{-1} \det A^T)^{-2}$$

 $\frac{\det(kA) = k^n \det A}{\ln p} \quad n \text{ je red kvadratne matrice } A$ 

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m \det(AB) = \det A \det B$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} = (\det (A^{-1}A^T))^{-2} = (\det A^{-1} \det A^T)^{-2} =$$

$$= ( )^{-2}$$

 $\frac{\det(kA) = k^n \det A}{\ln \text{ je red kvadratne matrice } A}$ 

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m \det(AB) = \det A \det B$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} = (\det (A^{-1}A^T))^{-2} = (\det A^{-1}\det A^T)^{-2} =$$

$$= \left(\frac{1}{\det A}\right)^{-2}$$

$$\frac{\det(kA) = k^n \det A}{\text{det } (kA)} \quad n \text{ je red kvadratne matrice } A$$

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m \det(AB) = \det A \det B$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} = (\det (A^{-1}A^T))^{-2} = (\det A^{-1} \det A^T)^{-2} =$$

$$= \left(\frac{1}{\det A} \cdot \right)^{-2}$$

 $\frac{\det(kA) = k^n \det A}{\text{det } (kA)} \quad n \text{ je red kvadratne matrice } A$ 

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m \det(AB) = \det A \det B$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} = (\det (A^{-1}A^T))^{-2} = (\det A^{-1}\det A^T)^{-2} =$$
$$= \left(\frac{1}{\det A} \cdot \det A\right)^{-2}$$

 $\frac{\det(kA) = k^n \det A}{n \text{ je red kvadratne matrice } A}$ 

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m \det(AB) = \det A \det B$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} = (\det (A^{-1}A^T))^{-2} = (\det A^{-1} \det A^T)^{-2} =$$

$$= \left(\frac{1}{\det A} \cdot \det A\right)^{-2} = 1^{-2}$$

 $\frac{\det(kA) = k^n \det A}{n \text{ je red kvadratne matrice } A}$ 

Neka je A regularna matrica reda 4 i det  $A = \frac{1}{4}$ . Izračunajte:

a) 
$$\det \left(\frac{1}{2}(A^{-1})^3\right)$$
 b)  $\det (A^{-1}A^T)^{-2}$ 

Rješenje 
$$\det(A^m) = (\det A)^m \det(AB) = \det A \det B$$

a) 
$$\det\left(\frac{1}{2}(A^{-1})^3\right) = \left(\frac{1}{2}\right)^4 \cdot \det\left(A^{-1}\right)^3 = \frac{1}{16} \cdot \left(\det A^{-1}\right)^3 =$$

$$= \frac{1}{16} \cdot \left(\frac{1}{\det A}\right)^3 = \frac{1}{16} \cdot 4^3 = 4$$

b) 
$$\det (A^{-1}A^T)^{-2} = (\det (A^{-1}A^T))^{-2} = (\det A^{-1} \det A^T)^{-2} =$$

$$= \left(\frac{1}{\det A} \cdot \det A\right)^{-2} = 1^{-2} = 1$$

 $\frac{\det(kA) = k^n \det A}{n \text{ je red kvadratne matrice } A}$ 

# Napomena

$$A^{-n}=\left(A^{-1}\right)^{n},\quad n\in\mathbb{N}$$

Na primjer,

$$A^{-3} = (A^{-1})^3$$

četvrti zadatak

$$AX = B$$
  $XA = B$ 

$$A^{-1} \cdot / AX = B$$

$$XA = B$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX)$$

$$XA = B$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) =$$

$$XA = B$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$XA = B$$

$$A^{-1} \cdot / AX = B$$
$$A^{-1}(AX) = A^{-1}B$$
$$(A^{-1}A)X$$

$$XA = B$$

$$A^{-1} \cdot / AX = B$$
$$A^{-1}(AX) = A^{-1}B$$
$$(A^{-1}A)X = A^{-1}B$$

$$XA = B$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$(A^{-1}A)X = A^{-1}B$$

$$I \cdot X$$

$$XA = B$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$(A^{-1}A)X = A^{-1}B$$

$$I \cdot X = A^{-1}B$$

$$XA = B$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$(A^{-1}A)X = A^{-1}B$$

$$I \cdot X = A^{-1}B$$

$$X = A^{-1}B$$

$$XA = B$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$(A^{-1}A)X = A^{-1}B$$

$$I \cdot X = A^{-1}B$$

$$X = A^{-1}B$$

$$XA = B / \cdot A^{-1}$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$(A^{-1}A)X = A^{-1}B$$

$$I \cdot X = A^{-1}B$$

$$X = A^{-1}B$$

$$XA = B / \cdot A^{-1}$$

$$(XA)A^{-1}$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$(A^{-1}A)X = A^{-1}B$$

$$I \cdot X = A^{-1}B$$

$$X = A^{-1}B$$

$$XA = B / \cdot A^{-1}$$
$$(XA)A^{-1} =$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$(A^{-1}A)X = A^{-1}B$$

$$I \cdot X = A^{-1}B$$

$$X = A^{-1}B$$

$$XA = B / \cdot A^{-1}$$
$$(XA)A^{-1} = BA^{-1}$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$(A^{-1}A)X = A^{-1}B$$

$$I \cdot X = A^{-1}B$$

$$X = A^{-1}B$$

$$XA = B / \cdot A^{-1}$$
$$(XA)A^{-1} = BA^{-1}$$
$$X(AA^{-1})$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$(A^{-1}A)X = A^{-1}B$$

$$I \cdot X = A^{-1}B$$

$$X = A^{-1}B$$

$$XA = B / \cdot A^{-1}$$
$$(XA)A^{-1} = BA^{-1}$$
$$X(AA^{-1}) = BA^{-1}$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$(A^{-1}A)X = A^{-1}B$$

$$I \cdot X = A^{-1}B$$

$$X = A^{-1}B$$

$$XA = B / \cdot A^{-1}$$
$$(XA)A^{-1} = BA^{-1}$$
$$X(AA^{-1}) = BA^{-1}$$
$$X \cdot I$$

$$A^{-1} \cdot / AX = B$$

$$A^{-1}(AX) = A^{-1}B$$

$$(A^{-1}A)X = A^{-1}B$$

$$I \cdot X = A^{-1}B$$

$$X = A^{-1}B$$

$$XA = B / \cdot A^{-1}$$
$$(XA)A^{-1} = BA^{-1}$$
$$X(AA^{-1}) = BA^{-1}$$
$$X \cdot I = BA^{-1}$$

$$A^{-1} \cdot / AX = B$$
  $XA = B / \cdot A^{-1}$   
 $A^{-1}(AX) = A^{-1}B$   $(XA)A^{-1} = BA^{-1}$   
 $(A^{-1}A)X = A^{-1}B$   $X(AA^{-1}) = BA^{-1}$   
 $I \cdot X = A^{-1}B$   $X \cdot I = BA^{-1}$   
 $X = BA^{-1}$ 

#### Zadatak 4

Riješite sljedeće matrične jednadžbe:

a) 
$$AX = BX + C$$

b) 
$$AXB - 2XB = B + AB$$

c) 
$$B(XA - I) + B^2 + 2BXA = O$$

d) 
$$A^{-1}(I + A^2X)B = 2AX$$

$$AX = BX + C$$

$$AX = BX + C$$

$$AX - BX = C$$

$$AX = BX + C$$
$$AX - BX = C$$
$$( )X$$

$$AX = BX + C$$
$$AX - BX = C$$
$$(A - B)X$$

$$AX = BX + C$$
$$AX - BX = C$$
$$(A - B)X = C$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X =$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AXB - 2XB = B + AB$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AXB - 2XB = B + AB$$

$$( )XB$$

a)

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

b)

$$AXB - 2XB = B + AB$$
$$(A - 2I)XB$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AXB - 2XB = B + AB$$
$$(A - 2I)XB =$$

a)

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

b)

$$AXB - 2XB = B + AB$$
$$(A - 2I)XB = ( )B$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AXB - 2XB = B + AB$$
$$(A - 2I)XB = (I + A)B$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AXB - 2XB = B + AB$$
$$(A - 2I)^{-1} \cdot / (A - 2I)XB = (I + A)B$$

a) 
$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

b) 
$$AXB - 2XB = B + AB$$
$$(A - 2I)^{-1} \cdot / (A - 2I)XB = (I + A)B$$
$$XB$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AXB - 2XB = B + AB$$
$$(A - 2I)^{-1} \cdot / (A - 2I)XB = (I + A)B$$
$$XB =$$

a) 
$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

b) 
$$AXB - 2XB = B + AB$$
$$(A - 2I)^{-1} \cdot / (A - 2I)XB = (I + A)B$$
$$XB = (A - 2I)^{-1}$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AXB - 2XB = B + AB$$
  
 $(A - 2I)^{-1} \cdot / (A - 2I)XB = (I + A)B$   
 $XB = (A - 2I)^{-1}(I + A)B$ 

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AXB - 2XB = B + AB$$
  
 $(A - 2I)^{-1} \cdot / (A - 2I)XB = (I + A)B$   
 $XB = (A - 2I)^{-1}(I + A)B / \cdot B^{-1}$ 

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AXB - 2XB = B + AB$$

$$(A - 2I)^{-1} \cdot / (A - 2I)XB = (I + A)B$$

$$XB = (A - 2I)^{-1}(I + A)B / \cdot B^{-1}$$

$$X$$

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AXB - 2XB = B + AB$$
 $(A - 2I)^{-1} \cdot / (A - 2I)XB = (I + A)B$ 
 $XB = (A - 2I)^{-1}(I + A)B / \cdot B^{-1}$ 
 $X = AXB - 2XB = B + AB$ 

$$AX = BX + C$$

$$AX - BX = C$$

$$(A - B)^{-1} \cdot / (A - B)X = C$$

$$X = (A - B)^{-1}C$$

$$AXB - 2XB = B + AB$$

$$(A - 2I)^{-1} \cdot / (A - 2I)XB = (I + A)B$$

$$XB = (A - 2I)^{-1}(I + A)B / \cdot B^{-1}$$

$$X = (A - 2I)^{-1}(I + A)$$

$$B(XA - I) + B^2 + 2BXA = O$$

$$B(XA - I) + B^2 + 2BXA = O$$

$$BXA$$

$$B(XA - I) + B^2 + 2BXA = O$$

$$BXA - B$$

$$B(XA - I) + B^2 + 2BXA = O$$
$$BXA - B + B^2$$

$$B(XA - I) + B2 + 2BXA = O$$
$$BXA - B + B2 + 2BXA$$

$$B(XA - I) + B2 + 2BXA = O$$
  
$$BXA - B + B2 + 2BXA = O$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA =$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2}$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$BXA$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$BXA = O$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$BXA = \frac{1}{3}(B - B^{2})$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA =$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot A = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot A = \frac{1}{3}(B - B^{2})$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$XA = \frac{1}{3}$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$XA = \frac{1}{3}(B - B^{2})$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$XA = \frac{1}{3}(I)$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$XA = \frac{1}{3}(I - I)$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$XA = \frac{1}{3}(I - B)$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$XA = \frac{1}{3}(I - B) / \cdot A^{-1}$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$XA = \frac{1}{3}(I - B) / \cdot A^{-1}$$

$$X$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$XA = \frac{1}{3}(I - B) / \cdot A^{-1}$$

$$X = \frac{1}{3}(I - B) / \cdot A^{-1}$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$XA = \frac{1}{3}(I - B) / \cdot A^{-1}$$

$$X = \frac{1}{3}(I - B)$$

$$B(XA - I) + B^{2} + 2BXA = O$$

$$BXA - B + B^{2} + 2BXA = O$$

$$3BXA = B - B^{2} / \cdot \frac{1}{3}$$

$$B^{-1} \cdot / BXA = \frac{1}{3}(B - B^{2})$$

$$XA = B^{-1} \cdot \frac{1}{3}(B - B^{2})$$

$$XA = \frac{1}{3}(I - B) / \cdot A^{-1}$$

$$X = \frac{1}{3}(I - B)A^{-1}$$

$$A^{-1}(I+A^2X)B=2AX$$

$$A^{-1}(I + A^2X)B = 2AX$$

$$( )B$$

$$A^{-1}(I + A^2X)B = 2AX$$
$$(A^{-1})B$$

$$A^{-1}(I + A^2X)B = 2AX$$
$$(A^{-1} + )B$$

$$A^{-1}(I + A^2X)B = 2AX$$
$$(A^{-1} + AX)B$$

$$A^{-1}(I + A^2X)B = 2AX$$
$$(A^{-1} + AX)B =$$

$$A^{-1}(I + A^2X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}(I + A^{2}X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B$$

$$A^{-1}(I + A^2X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B +$$

$$A^{-1}(I + A^{2}X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B + AXB$$

$$A^{-1}(I + A^{2}X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B + AXB =$$

$$A^{-1}(I + A^{2}X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B + AXB = 2AX$$

$$A^{-1}(I + A^{2}X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B + AXB = 2AX$$
$$AXB - 2AX$$

$$A^{-1}(I + A^{2}X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B + AXB = 2AX$$
$$AXB - 2AX =$$

$$A^{-1}(I + A^{2}X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B + AXB = 2AX$$
$$AXB - 2AX = -A^{-1}B$$

$$A^{-1}(I + A^{2}X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B + AXB = 2AX$$
$$AXB - 2AX = -A^{-1}B$$
$$AXB -$$

$$A^{-1}(I + A^{2}X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B + AXB = 2AX$$
$$AXB - 2AX = -A^{-1}B$$
$$AXB - AX \cdot 2I$$

$$A^{-1}(I + A^{2}X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B + AXB = 2AX$$
$$AXB - 2AX = -A^{-1}B$$
$$AXB - AX \cdot 2I =$$

$$A^{-1}(I + A^{2}X)B = 2AX$$
$$(A^{-1} + AX)B = 2AX$$
$$A^{-1}B + AXB = 2AX$$
$$AXB - 2AX = -A^{-1}B$$
$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$AX()$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$AX(B - 2I)$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$AX(B - 2I) =$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$AX(B - 2I) = -A^{-1}B$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I)$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I) =$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I) = A^{-1} \cdot$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I) = A^{-1} \cdot (-A^{-1}B)$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I) = A^{-1} \cdot (-A^{-1}B)$$

$$X(B - 2I)$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I) = A^{-1} \cdot (-A^{-1}B)$$

$$X(B - 2I) =$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I) = A^{-1} \cdot (-A^{-1}B)$$

$$X(B - 2I) = -A^{-2}B$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I) = A^{-1} \cdot (-A^{-1}B)$$

$$X(B - 2I) = -A^{-2}B / \cdot (B - 2I)^{-1}$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I) = A^{-1} \cdot (-A^{-1}B)$$

$$X(B - 2I) = -A^{-2}B / \cdot (B - 2I)^{-1}$$

$$X$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I) = A^{-1} \cdot (-A^{-1}B)$$

$$X(B - 2I) = -A^{-2}B / \cdot (B - 2I)^{-1}$$

$$X =$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I) = A^{-1} \cdot (-A^{-1}B)$$

$$X(B - 2I) = -A^{-2}B / \cdot (B - 2I)^{-1}$$

$$X = -A^{-2}B$$

$$A^{-1}(I + A^{2}X)B = 2AX$$

$$(A^{-1} + AX)B = 2AX$$

$$A^{-1}B + AXB = 2AX$$

$$AXB - 2AX = -A^{-1}B$$

$$AXB - AX \cdot 2I = -A^{-1}B$$

$$A^{-1} \cdot / AX(B - 2I) = -A^{-1}B$$

$$X(B - 2I) = A^{-1} \cdot (-A^{-1}B)$$

$$X(B - 2I) = -A^{-2}B / \cdot (B - 2I)^{-1}$$

$$X = -A^{-2}B(B - 2I)^{-1}$$

# \_\_\_\_\_

peti zadatak

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$
$$X - ABX$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$
  
 $X - ABX =$ 

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$
$$X - ABX = I$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$
$$X - ABX = I$$
$$( )X$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$
$$X - ABX = I$$
$$(I - AB)X$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$
$$X - ABX = I$$
$$(I - AB)X =$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$
$$X - ABX = I$$
$$(I - AB)X = I$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$

$$X - ABX = I$$

$$(I - AB)^{-1} \cdot / (I - AB)X = I$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$

$$X - ABX = I$$

$$(I - AB)^{-1} \cdot / (I - AB)X = I$$

$$X$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$

$$X - ABX = I$$

$$(I - AB)^{-1} \cdot / (I - AB)X = I$$

$$X =$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$

$$X - ABX = I$$

$$(I - AB)^{-1} \cdot / (I - AB)X = I$$

$$X = (I - AB)^{-1} \cdot$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$

$$X - ABX = I$$

$$(I - AB)^{-1} \cdot / (I - AB)X = I$$

$$X = (I - AB)^{-1} \cdot I$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$

$$X - ABX = I$$

$$(I - AB)^{-1} \cdot / (I - AB)X = I$$

$$X = (I - AB)^{-1} \cdot I$$

$$X = (I - AB)^{-1}$$

Riješite matričnu jednadžbu X - I = ABX ako je

$$A = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}, \qquad B = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}.$$

$$X - I = ABX$$

$$X - ABX = I$$

$$(I - AB)^{-1} \cdot / (I - AB)X = I$$

$$X = (I - AB)^{-1} \cdot I$$

$$X = (I - AB)^{-1}$$

$$X = (I - AB)^{-1}$$

AB =

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & & \\ & & \\ & & \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB =$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{vmatrix} 1 & 0 \\ 0 & 1 \end{vmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$
$$\begin{bmatrix} 1 & 0 \end{bmatrix} \quad \begin{bmatrix} 3 & -4 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & & \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det(I - AB) =$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det\left(I-AB\right)=-2\cdot\left(-5\right)$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det\left(I - AB\right) = -2 \cdot (-5) -$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det(I - AB) = -2 \cdot (-5) - (-9) \cdot 4$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det(I - AB) = -2 \cdot (-5) - (-9) \cdot 4 = 10 + 36$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det(I - AB) = -2 \cdot (-5) - (-9) \cdot 4 = 10 + 36 = 46$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det(I - AB) = -2 \cdot (-5) - (-9) \cdot 4 = 10 + 36 = 46$$

$$X = (I - AB)^{-1}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det(I - AB) = -2 \cdot (-5) - (-9) \cdot 4 = 10 + 36 = 46$$

$$X = (I - AB)^{-1} = \frac{1}{46}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det(I - AB) = -2 \cdot (-5) - (-9) \cdot 4 = 10 + 36 = 46$$

$$X = (I - AB)^{-1} = \frac{1}{46}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det(I - AB) = -2 \cdot (-5) - (-9) \cdot 4 = 10 + 36 = 46$$

$$X = (I - AB)^{-1} = \frac{1}{46} \begin{bmatrix} -5 \\ -1 & 1 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det(I - AB) = -2 \cdot (-5) - (-9) \cdot 4 = 10 + 36 = 46$$

$$X = (I - AB)^{-1} = \frac{1}{46} \begin{bmatrix} -5 \\ -2 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det(I - AB) = -2 \cdot (-5) - (-9) \cdot 4 = 10 + 36 = 46$$

$$X = (I - AB)^{-1} = \frac{1}{46} \begin{bmatrix} -5 \\ 9 & -2 \end{bmatrix}$$

$$X = (I - AB)^{-1}$$

$$AB = \begin{bmatrix} 1 & -2 \\ -3 & 0 \end{bmatrix} \begin{bmatrix} -3 & -2 \\ -3 & 1 \end{bmatrix} = \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix}$$

$$I - AB = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 9 & 6 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ -9 & -5 \end{bmatrix}$$

$$\det(I - AB) = -2 \cdot (-5) - (-9) \cdot 4 = 10 + 36 = 46$$

$$X = (I - AB)^{-1} = \frac{1}{46} \begin{bmatrix} -5 & -4 \\ 9 & -2 \end{bmatrix}$$