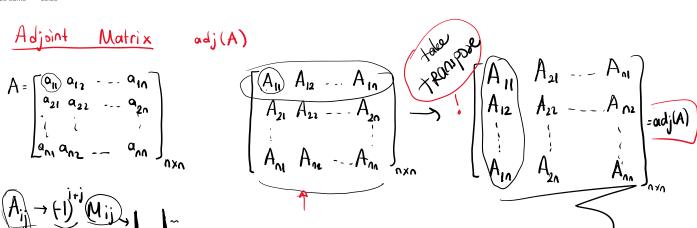
## 5th Week Friday

24 Mart 2023 Cuma 10:26





$$A = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & & & & \\ a_{n1} & a_{n2} & \cdots & & & \\ a_{nn} & a_{nn} & \cdots & & & \\ \end{bmatrix}$$



$$A = \begin{bmatrix} 1 & (5 & 3) \\ -2 & -4 & -3 \\ \hline -3 & -5 & 1 \\ \end{bmatrix}_{3\times 3}$$

$$A = \begin{bmatrix} 1 & 5 & 3 \\ -2 & -4 & -3 \end{bmatrix} \qquad \text{adj}(A) = \begin{bmatrix} A_{11} & A_{21} & A_{31} \\ A_{12} & A_{12} & A_{32} \\ A_{13} & A_{23} & A_{33} \end{bmatrix} = \begin{bmatrix} \frac{-19}{20} & \frac{-20}{3} \\ \frac{11}{20} & \frac{10}{3} \\ \frac{-2}{20} & \frac{-10}{20} & \frac{6}{3} \end{bmatrix}$$

$$A_{H} = \underbrace{(-1)}_{+}^{1+1} \underbrace{M_{H}}_{-5+1}^{1-4-3} = -4-(15)$$
= -19

$$A_{12} = \underbrace{(-1)^{1+2}}_{-1} \underbrace{M_{12}}_{-2-3} \Big|_{z-2-9}$$

$$A_{12} = \underbrace{(-1)}_{-2}^{+2} \underbrace{M_{12}}_{-3}$$

$$A_{13} = \underbrace{(-1)}_{+}^{+2} \underbrace{M_{13}}_{-2}$$

$$A_{13} = \underbrace{(-1)}_{+2}^{+2} \underbrace{M_{13}}_{-3}$$

$$A_{13} = \underbrace{(-1)}_{+2}^{+2} \underbrace{M_{13}}_{-3}$$

$$A_{21} = (-1)^{2+1}$$

$$\begin{bmatrix} M_{21} \\ -5 \end{bmatrix} = 5 - (-15)$$

$$= 20$$

$$A_{22} = (-1)^{2+2} \underbrace{M_{22}}_{1} + \underbrace{M_{22}}_{1-3} = 1 - (-9)$$

$$A_{21} = (-1)^{2+1} \underbrace{M_{21}}_{5} = 5 - (-15) \qquad A_{22} = (-1)^{2+2} \underbrace{M_{22}}_{1-3-1} = 10 \qquad A_{23} = (-1)^{2+3} \underbrace{M_{23}}_{5-3-5} = -5 - (-15) = 10$$

$$A_{31} = \underbrace{(-1)^{3+1}}_{+} \underbrace{(M_{31})}_{|-4|-3} = -15 - (-11)$$

$$A_{32} = \underbrace{(-1)^{3+2}}_{|-2|-3} \underbrace{(M_{32})}_{|-2|-3} = -3 - (-6)$$

$$A_{33} = \underbrace{(-1)^{3+3}}_{|-2|-3} \underbrace{(M_{33})}_{|-2|-4} = 6$$

$$A_{32} = (-1)^{3+2} M_{32}$$

$$A_{33} = \underbrace{(-1)}_{+}^{3+3} \underbrace{(M_{33})}_{-2} \begin{vmatrix} 1 & 5 \\ -2 & -4 \end{vmatrix} = -4 - (-10)$$

Application of the Adjoint Matrix on finding. A

$$A. adj(A) = 
\begin{bmatrix}
\alpha_{11} & \alpha_{12} & \cdots & \alpha_{1n} \\
\alpha_{21} & \alpha_{22} & \cdots & \alpha_{2n}
\end{bmatrix}
\begin{bmatrix}
A_{11} & A_{21} & \cdots & A_{n1} \\
A_{12} & A_{2n} & A_{nn}
\end{bmatrix}
= 
\begin{bmatrix}
\det(A) & 0 & 0 & \cdots & 0 \\
0 & \det(A) & - C & \cdots & \\
0 & \det(A) & - C & \cdots & \\
0 & \det(A) & - C & \cdots & \\
0 & \det(A) & - C & \cdots & \\
0 & \det(A) & - C & \cdots & \\
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0 & \det(A) & - C & \cdots & \\
0 & \det(A) & - C$$

$$\sqrt{a_{11}} A_{11} + a_{12} A_{12} + ... + a_{1n} A_{1n} = \det(A)$$

$$A_{11} A_{11} + a_{12} A_{21} + ... + a_{1n} A_{2n} = 0$$

A adj(A) = 
$$\det(A)$$
  $I_n$ 

A adj(A) = 
$$\det(A)(I_n)$$

$$A = I_n$$

$$A^{-1}$$