

# Latex Assignment18

D.V.S. NIKHIL

16 August, 2023

## Ex 12.3.4

Using elementary transformations, find the inverse of each of the matrices, if it exists in 1 to 17:

1.  $\begin{pmatrix} 1 & -1 \\ 2 & 3 \end{pmatrix}$

2.  $\begin{pmatrix} 2 & 1 \\ 1 & 1 \end{pmatrix}$

3.  $\begin{pmatrix} 1 & 3 \\ 2 & 7 \end{pmatrix}$

4.  $\begin{pmatrix} 2 & 3 \\ 5 & 7 \end{pmatrix}$

5.  $\begin{pmatrix} 2 & 1 \\ 7 & 4 \end{pmatrix}$

6.  $\begin{pmatrix} 2 & 5 \\ 1 & 3 \end{pmatrix}$

7.  $\begin{pmatrix} 3 & 1 \\ 5 & 2 \end{pmatrix}$

8.  $\begin{pmatrix} 4 & 5 \\ 3 & 4 \end{pmatrix}$

9.  $\begin{pmatrix} 3 & 10 \\ 2 & 7 \end{pmatrix}$

10.  $\begin{pmatrix} 3 & -1 \\ -4 & 2 \end{pmatrix}$

11.  $\begin{pmatrix} 2 & -6 \\ 1 & -2 \end{pmatrix}$

$$12. \begin{pmatrix} 6 & -3 \\ -2 & 1 \end{pmatrix}$$

$$13. \begin{pmatrix} 2 & -3 \\ -1 & 2 \end{pmatrix}$$

$$14. \begin{pmatrix} 2 & 1 \\ 4 & 2 \end{pmatrix}$$

$$15. \begin{pmatrix} 2 & -3 & 3 \\ 2 & 2 & 3 \\ 3 & -2 & 2 \end{pmatrix}$$

$$16. \begin{pmatrix} 1 & 3 & -2 \\ -3 & 0 & -5 \\ 2 & 5 & 0 \end{pmatrix}$$

$$17. \begin{pmatrix} 2 & 0 & -1 \\ 5 & 1 & 0 \\ 0 & 1 & 3 \end{pmatrix}$$

18. Matrices  $A$  and  $B$  will be inverse of each other only if:

(a)  $AB = BA$

(b)  $AB = BA = 0$

(c)  $AB = 0, BA = I$

(d)  $AB = BA = I$