Thùy Linh

Bài 8

a) A= $\begin{vmatrix} 1 & 3 & 5 & -1 \\ 2 & -1 & -1 & 4 \\ 5 & 1 & -1 & 7 \\ 7 & 7 & 9 & 1 \end{vmatrix} = \begin{vmatrix} 1 & 3 & 5 & -1 \\ 0 & -7 & -11 & 6 \\ 0 & -14 & -26 & 12 \\ 0 & -14 & -26 & 8 \end{vmatrix} = \begin{vmatrix} 1 & 3 & 5 & -1 \\ 0 & -7 & -11 & 6 \\ 0 & 0 & -4 & 0 \\ 0 & 0 & 0 & -4 \end{vmatrix}$

r(A) = 4

Cách 2: det(A)=-112 # 0 => r(A)=n=4

b) B= $\begin{vmatrix} 4 & 3 & -5 & 2 & 3 \\ 8 & 6 & -7 & 4 & 2 \\ 4 & 3 & -8 & 2 & 7 \\ 4 & 3 & 1 & 2 & -5 \\ 8 & 6 & -1 & 4 & -6 \end{vmatrix} = \begin{vmatrix} 4 & 3 & -5 & 2 & 3 \\ 0 & 0 & -3 & 0 & -4 \\ 0 & 0 & -3 & 0 & 4 \\ 0 & 0 & 6 & 0 & -8 \\ 0 & 0 & 9 & 0 & -12 \end{vmatrix}$

$= \begin{vmatrix} 4 & 3 & -5 & 2 & 3 \\ 0 & 0 & -3 & 0 & -4 \\ 0 & 0 & -3 & 0 & 4 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{vmatrix}$

r(B) = 3

Bài 9:

Cách 1: A = $\begin{bmatrix} 1 & -1 & 1 & 2 \\ -1 & 2 & 2 & 1 \\ 1 & 0 & 4 & m \end{bmatrix} = \begin{bmatrix} 1 & -1 & 1 & 2 \\ 0 & 1 & 3 & 3 \\ 0 & 1 & 3 & m-2 \end{bmatrix} = \begin{bmatrix} 1 & -1 & 1 & 2 \\ 0 & 0 & 4 & 5 \\ 0 & 0 & 0 & m-5 \end{bmatrix}$

r(A) = 2 -> m- 5 = 0 -> m =5

Cách 2:

R(A) = 2 -> det của ma trận A vuông cấp 3 = 0

A = $\begin{bmatrix} -1 & 1 & 2 \\ 2 & 2 & 1 \\ 0 & 4 & m \end{bmatrix}$

➔ det (A)= $\begin{vmatrix} -1 & 1 & 2 \\ 2 & 2 & 1 \\ 0 & 4 & m \end{vmatrix}$ =-4m+20 = 0 -> m=5