Step-1

We have to find that which of the following rules give a correct definition

of the rank of *A*.

Let *R* be the row reduced echelon form of the matrix $'A'$

a) The number of non zero rows in *R*.

The above definition gives the correct definition for the rank of *A*.

Step-2

b) The number of columns minus the total number of rows.

The above definition does not give the correct definition for the rank of *A*.

For example, $A=\begin{bmatrix}1 & 0\\ 0 & 0\end{bmatrix}$ has rank 1.

But number of columns minus the total number of rows = 0

Step-3

c) The number of columns minus the number of free columns.

The above definition gives the correct definition for the rank of *A*.

Step-4

d) The number 1s in *R*.

The above definition does not give the correct definition for the rank of *A*.

For example, if $A=\begin{bmatrix}1 & 1 & 1 & 1\\ 0 & 0 & 0 & 0\\ 0 & 0 & 0 & 0\end{bmatrix}$, rank of *A* = 1 but *A* has four â€˜1â€™ s.