Step-1

Given, A and B have same reduced row echelon form R.

We have to explain that how to change A to B by elementary row operations. So B equals an ——— matrix times of A.

Step-2

Let rank of A = ranks of B and A, B have same reduced row echelon form.

Therefore after finite elementary row operations A reduces to R.

Similarly, after finite elementary row operations B recues to R.

$R = EA$

And $R = E^{*}B$

Step-3

$$B = (E^{*})^{-1} R$$

$$= (E^{*})^{-1} EA$$

$$B = \left((E^{*})^{-1} E\right) A$$

Hence E, E^{*} are invertible matrix, they $(E^{*})^{-1} E$ is invertible.

Hence B is an invertible matrix times A.