

### Definition of Row Equivalence

Let  $A$  and  $B$  be  $m \times n$  matrices. Matrix  $B$  is **row-equivalent** to  $A$  when there exists a finite number of elementary matrices  $E_1, E_2, \dots, E_k$  such that

$$B = E_k E_{k-1} \cdots E_2 E_1 A$$