

**Reduced echelon form** Add the conditions:

4. *The leading entry in each nonzero row is 1.*
5. *Each leading 1 is the only nonzero entry in its column.*

■ **EXAMPLE 1** (continued)

Reduced echelon form:

$$\begin{bmatrix} 0 & 1 & * & 0 & 0 & 0 & * & * & * & 0 & * \\ 0 & 0 & 0 & 1 & 0 & 0 & * & * & * & 0 & * \\ 0 & 0 & 0 & 0 & 1 & 0 & * & * & * & 0 & * \\ 0 & 0 & 0 & 0 & 0 & 1 & * & * & * & 0 & * \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & * \end{bmatrix}$$

THEOREM 1. UNIQUENESS OF THE  
REDUCED ECHELON FORM

*Each matrix is row-equivalent to one and only one reduced echelon matrix.*