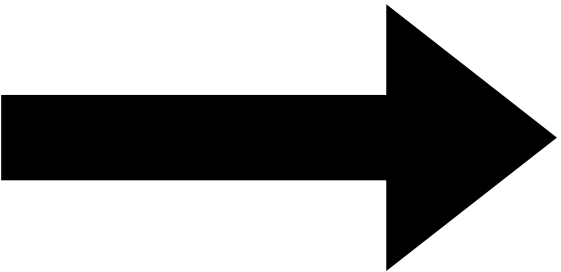


Example: Row Reductions

$$\begin{bmatrix} 2 & 3 & -6 \\ 4 & -5 & 10 \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 2 \end{bmatrix}$$

$$R_2 \rightarrow R_2 - 2R_1$$

$$R_2 \rightarrow R_2 / (-11)$$

$$R_1 \rightarrow R_1 - 3R_2$$

$$R_1 \rightarrow R_1 / 2$$



elimination



substitution

Example: Row Reductions

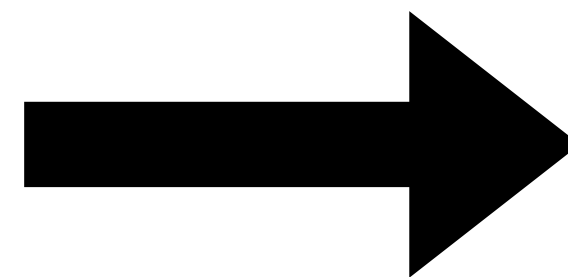
$$\begin{array}{l} R_2 \rightarrow R_2 - 2R_1 \\ R_2 \rightarrow R_2 / (-11) \end{array}$$

elimination

$$\begin{array}{l} R_1 \rightarrow R_1 - 3R_2 \\ R_1 \rightarrow R_1 / 2 \end{array}$$

substitution

$$\begin{bmatrix} 2 & 3 & -6 \\ 4 & -5 & 10 \end{bmatrix}$$

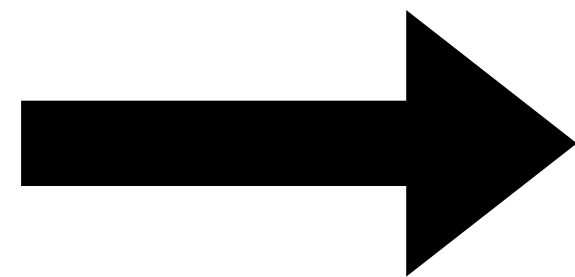


$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 2 \end{bmatrix}$$

Row Equivalence

Definition. Two matrices are *row equivalent* if one can be transformed into the other by a sequence of row operations

$$\begin{bmatrix} 2 & 3 & -6 \\ 4 & -5 & 10 \end{bmatrix}$$



$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & -2 \end{bmatrix}$$