

- 3** Which three matrices E_{21} , E_{31} , E_{32} put A into triangular form U ?

$$A = \begin{bmatrix} 1 & 1 & 0 \\ 4 & 6 & 1 \\ -2 & 2 & 0 \end{bmatrix} \quad \text{and} \quad E_{32}E_{31}E_{21}A = U.$$

Multiply those E 's to get one matrix M that does elimination: $MA = U$.

- 7** What three elimination matrices E_{21} , E_{31} , E_{32} put A into its upper triangular form $E_{32}E_{31}E_{21}A = U$? Multiply by E_{32}^{-1} , E_{31}^{-1} and E_{21}^{-1} to factor A into L times U :

$$A = \begin{bmatrix} 1 & 0 & 1 \\ 2 & 2 & 2 \\ 3 & 4 & 5 \end{bmatrix} \quad L = E_{21}^{-1}E_{31}^{-1}E_{32}^{-1}.$$