

$$I_{0+k} = \begin{matrix} & \text{k+1} \\ \left[\begin{array}{cccc} 0 & 0 & 0 & \dots \\ 0 & 1 & 0 & \dots \\ 0 & 0 & 1 & \dots \\ \dots & \dots & \dots & \dots \end{array} \right] & \text{k+1} \end{matrix}$$

k+1 x k+1 identity
matrix, but with 0
in upper left