

Assume that the matrix  $R$  is the reduced echelon form of some matrix  $A$ .

$$B = \begin{pmatrix} 1 & 0 & 2 & 0 & 1 \\ 0 & 1 & 0 & 0 & 2 \\ 0 & 0 & 0 & 1 & 1 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix}$$

- Find a basis for the vector space  $\text{row}(A)$ .
- Find a basis for  $\text{null}(A)$ .
- Can you find a basis for  $\text{col}(A)$ ? Explain your answer.
- Which columns of  $A$  form a basis for  $\text{col}(A)$ ?
- What is  $\text{rank}(A)$ ?