

**WORKSHEET 10/5/22**  
**MATH 2331, FALL 2022**

For the following problems, you are given the information that the reduced row-echelon form of  $A$  is the matrix  $\begin{bmatrix} 1 & 0 & -1 \\ 0 & 1 & 2 \\ 0 & 0 & 0 \end{bmatrix}$ .

- (1) Do you have enough information to find a basis for  $\ker(A)$ ? If yes, do so.
- (2) Do you have enough information to find a basis for  $\text{im}(A)$ ? If yes, do so.
- (3) How do your answers to the previous questions change given the additional information

that  $A = \begin{bmatrix} 1 & 4 & 7 \\ 2 & 5 & 8 \\ 3 & 6 & 9 \end{bmatrix}$ ?