

(Day 2)

① For each matrix below,

determine if it is RREF. Also:

Whether RREF or not, circle the

pivots.

$$A = \begin{bmatrix} 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 5 \\ 0 & 0 & 1 & 7 \end{bmatrix}$$

$$B = \begin{bmatrix} 5 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$$C = \begin{bmatrix} 1 & 2 & 3 \\ 0 & 1 & 4 \\ 0 & 0 & 1 \end{bmatrix}$$

$$D = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 1 \end{bmatrix}$$

$$E = \begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \end{bmatrix}$$

$$F = \begin{bmatrix} 1 & 4 & 0 & 1 & 0 & 6 \\ 0 & 0 & 1 & 2 & 0 & 7 \\ 0 & 0 & 0 & 0 & 1 & 5 \end{bmatrix}$$

$$G = \begin{bmatrix} 0 & 1 & 2 & 3 & 0 & 0 & 4 & 0 & 6 \\ 0 & 0 & 0 & 0 & 0 & 1 & 0 & 5 & 0 \end{bmatrix}$$

② Interpret matrix F from ① as a (linear) system of equations.

③ Represent
$$\begin{array}{r} x + 2y = 3 \\ 3x + 4y = 5 \end{array}$$
 with an

augmented matrix and find a sequence of three row operations that reach RREF.

④ Can a matrix have more pivot rows than pivot columns? Justify your answer.

⑤ How can a computer help you check whether two systems of linear equations are equivalent?