

M353 2.4 PA=LU (S. Zhang) .

1. (2.4:a1) Solve the following system $(A|b)$

- (a) by GE without pivoting, (no row switching, no row multiplication)
- (b) by finding $A = LU$ and using it
- (c) by GE with partial pivoting, (row pivoting every step)
- (d) by finding $PA = LU$ and using it

$$\left(\begin{array}{ccc|c} 1 & -3 & 2 & 5 \\ -2 & 0 & 2 & 2 \\ 3 & -1 & -1 & 0 \end{array} \right)$$

2. (2.4:a2) Solve the following system $(A|b)$

- (a) by GE without pivoting, (no row switching, no row multiplication)
- (b) by finding $A = LU$ and using it
- (c) by GE with partial pivoting, (row pivoting every step)
- (d) by finding $PA = LU$ and using it

$$\left(\begin{array}{ccc|c} 1 & -5 & -11 & -9 \\ -1 & 2 & 1 & -1 \\ -2 & 5 & 5 & 1 \end{array} \right)$$