

$$H = \begin{bmatrix} 1 & 1/2 & 1/3 \\ 1/2 & 1/3 & 1/4 \\ 1/3 & 1/4 & 1/5 \end{bmatrix} = A$$

$$PA = \begin{bmatrix} 1/3 & 1/4 & 1/5 \end{bmatrix}$$

FOR  $i$  IN RANGE(2):

IF  $\text{ABS}(A[i, 0]) < \text{ABS}(A[i+1, 0])$ :

$PA[i] = A[i+1]$  ✓

$PA[i+1] = A[i]$

$P[i, i+1] = 1$

$P[i+1, i] = 1$

ELSE

$PA[i] = A[i]$

$P[i, i] = 1$

TOUR PIVOT  
FUNCTION

SETS

$A[2, 2] = 0$

FOR  $j = 0, 1, 2$

$$M_1 H = \begin{bmatrix} 1 & 0 & 0 \\ -1/2 & 1 & 0 \\ -1/3 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 1/2 & 1/3 \\ 1/2 & 1/3 & 1/4 \\ 1/3 & 1/4 & 1/5 \end{bmatrix}$$

$$= \begin{bmatrix} 1 & 1/2 & 1/3 \\ 0 & -1/4 & 1/3 (-1/2 + 1/4) \\ 0 & -1/6 + 1/4 & -1/4 + 1/5 \end{bmatrix} = \begin{bmatrix} 1 & 1/2 & 1/3 \\ 0 & 0.083 & 0.083 \\ 0 & 0.083 & 0.089 \end{bmatrix}$$

$$M_2 M_1 H = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 1 & 1 \end{bmatrix} \begin{bmatrix} 1 & 1/2 & 1/3 \\ 0 & 0.083 & 0.083 \\ 0 & 0.083 & 0.089 \end{bmatrix} = \begin{bmatrix} 1 & 1/2 & 1/3 \\ 0 & 0.083 & 0.083 \\ 0 & 0 & 0.006 \end{bmatrix}$$