

Ceng 375 - Quiz 2

For Tuesday section (OPEN SOURCE quiz)

1. Solve this system by Gaussian elimination with partial pivoting:

$$\begin{aligned}3x_1 + 2x_2 + x_3 &= 19 \\x_1 - 5x_2 - 2x_3 &= -40 \\4x_1 - 8x_2 + 3x_3 &= -32\end{aligned}$$

- Use only three significant digits of precision.
- How many row interchanges are needed? (Solution: [3,7,4])
- What is the LU equivalent of the coefficient matrix?

For Wednesday section (OPEN SOURCE quiz)

1. Solve the following linear system by Jacobi iterations;

$$\begin{aligned}2x + 6y + z &= 5 \\x - 4y + 5z &= 32 \\3x - 3y - 2z &= 2\end{aligned}$$

- Start by $P_0 = (0, 0, 0)$;
- iterate only two steps.