'''

Authors: Hunter Van Horn, Dexter Ward

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This program will solve a complex system of equations

'''

import numpy as np

**def** solveSystem():

    twoPi = np.pi\*2

    f = 1000

    Vs = 7.07

    r1 = 680

    r2 = 2200

    r4 = 4700

    r5 = 1000

    r6 = 1000

    c1 = .22E-6

    l1 = 100E-3

    xc = -1**j**\*(1/(twoPi\*f\*c1))

    xl = 1**j**\*(twoPi\*f\*l1)

    a = np.array([[(1/r1+1/r4+1/r6+1/xc),(-1/r6),(-1/r4)],

                  [(-1/r6),(1/r6+1/xl+1/r2),(-1/xl)],

                  [(-1/r4),(-1/xl),(1/r4+1/xl+1/r5)]])

    b = np.array([[(Vs/r1)],[0],[0]])

    c = np.linalg.solve(a,b)

    print(**f**'V1: {float(np.absolute(c[0]))}\u2220{str(np.rad2deg(np.angle(c[0])))[1:-1]}')

    print(**f**'V2: {str(np.absolute(c[1]))[1:-1]}\u2220{str(np.rad2deg(np.angle(c[1])))[1:-1]}')

    print(**f**'V3: {str(np.absolute(c[2]))[1:-1]}\u2220{str(np.rad2deg(np.angle(c[2])))[1:-1]}')

if \_\_name\_\_ == "\_\_main\_\_":

    solveSystem()

A diagram of a circuit

AI-generated content may be incorrect.

A screenshot of a computer program

AI-generated content may be incorrect.A screen with colorful lines on it

AI-generated content may be incorrect.A graph of different colored lines

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