Write a MATLAB <u>function</u> to generate compliance and stiffness matrices based on engineering constants for

    a.  Orthotropic material (Carbon fiber / Epoxy for $V_f = 0.72$)

$$E_1 = 163 \text{ GPa} , E_2 = 20.3 \text{ GPa} , E_3 = 11.3 \text{ GPa},$$
$$G_{12} = 5.50 \text{ GPa} , G_{23} = 3.83 \text{ GPa} , G_{13} = 4.50\text{GPa}$$
$$v_{12} = 0.31 , v_{23} = 0.38 , v_{13} = 0.32$$

    b.  Transversely isotropic material (Carbon fiber/ Epoxy $V_f = 0.5$ )

$$E_1 = 135 \text{ GPa} , E_2 = 10 \text{ GPa} \quad G_{12} = 5 \text{ GPa} \quad v_{12} = 0.3 \quad v_{23} = 0.35$$

    c.  Isotropic material (Aluminum)

$$E = 69 \, GPa , G = 27 \, GPa$$

Your program must import engineering constants from an excel spreadsheet.

- Try to write a concise MATLAB program.  In coding, LESS IS MORE
- Write a MATLAB function not a MATLAB script, learn the difference.
- Every line of your MATLAB code should be commented.
- Send me your m-files as an email attachment.