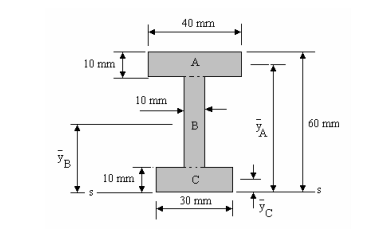
**a. The two alternating voltages are given by**

i. Determine a sinusoidal expression for the resultant by finding the horizontal and vertical components.

ii. Determine the resultant = using horizontal and vertical components.

**(b)Calculate the 1st and 2nd moment of area for the shape shown about the axis s-s and find the position of the centroid. ( Part of L.O. 3.1)**



L.O. (Part of 3.1)

(c) Find the eigenvalues and eigen vectors for the matrix

**TASK: 5**

**Determine the power series solution of the differential equation:**

**Using Leibniz - Maclaurin’s method, given the boundary conditions that at**

**(L.O.4: 4.4)**

TASK 6:

1. Determine the general power series solution of Bessel’s equation.

(Part of D3)

1. Show that the power series solution of the Bessel equation of the above problem may be written in terms of the Bessel functions