Home assignment 3

Consider the membrane of polygonal shape of the figure for which density ρ, thickness t, tightening S' (force per unit length) are constants. Using the given displacement values at the grid points on the boundary, determine the unknown transverse displacement values w_1, w_2 and w_3 using the given Laplacian stencil for the interior points given by the Finite Element Method and bi-linear approximation on rectangle elements.