Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Student number\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Home assignment 2**

Consider free vibration of a rectangular membrane of side lengths  and , density , thickness , and tightening . If the edges are fixed, find the angular velocities of the free vibrations using a regular grid  of constant spacing and the Finite Element Method with a piecewise linear approximation on regular triangle elements. Consider the modes, that are reflection symmetric with respect to the lines through the center point (figure).

*x*

*L*

*y*

2*L*