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

**Home assignment 2**

Consider vibration of a rectangular membrane of side lengths  and , density , thickness , and tightening  (force per unit length). If the edges are fixed, find the angular velocity of the free vibrations using the Finite Difference Method on a regular grid of points . Consider the mode, which is reflection symmetric with respect to the lines through the center point (figure).

*x*

*L*

*y*

2*L*