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

**Home assignment 2**

What is relative (numerical) error in the smallest frequency of the free vibrations  of the string shown if predicted by the Finite Difference Method and a regular spatial grid ? Cross-sectional area , density of the material , and horizontal tightening  are constants. Use the three-point central difference approximation to the second derivative with respect to . The smallest frequency given by the continuum model .

*L*





