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

**Assignment 3 (4p)**

Principle of virtual work for a simply supported Bernoulli beam is given by the variational problem: find  such that

 

in which , , . Bending stiffness and the external distributed force  are constants. Deduce first the underlying boundary value problem. After that, solve the problem for the transverse displacement .

**Answer** 