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

**Assignment 1 (2p)**

Find the stress resultants of the plate strip of length *L*, width *H*, and thickness *t* which is loaded by its own weight. Density of the plate material is *ρ*. Assume that the resultants do not depend on *y*. Use the plate equilibrium equations in the Cartesian system

*n*

*L*

*x*

*g*

 and  in .

**Solution**

In plate strip problem, the resultants do not depend on *y* and . The differential equations that are not satisfied automatically and their boundary conditions at the free end simplify to

*b*

 in  and  at 

 in  and  at 

 in  and  at 

Solutions to the stress resultants are

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