Kul-49.3200 Mechanics of materials II 25.5.2011
Exam

Answer to each five (5) problems. Write your name and student number to every sheet. Return every sheet, including this exam sheet and empty sheets.

Problem 1. Answer shortly / define shortly the following concepts:

a) Betti's theorem (1p)

b) Shear flow (1p)

c) Does the location of the shear centre depend on the forces applied to the beam? (1p)

d) In what case is Coulomb theory of torsion and in what case de Saint Venant theory of torsion used? (1p)

e) A beam is loaded with a compressing axial force P and a lateral force F. Are the displacements growing linearly when the value of P is increased? What if F is increased? Assume that material of the structure is linearly elastic. (1p)

f) Statically undetermined structure (1p)