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

**Assignment 2 (2p)**

Derive the constitutive equations of Kirchhoff shell in cylindrical  coordinates. Assume that all derivatives with respect to the angular coordinate  and displacement and rotation components  and  vanish. The constitutive equations of Reissner-Mindlin shell in cylindrical  coordinates are

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, .

**Solution template**

All derivatives with respect to the angular coordinate  and displacement and rotation components  and  vanish. Kirchhoff constraints imply that

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When the Kirchhoff constraint is used to eliminate the rotation variable , the constitutive equations for the non-zero stress resultants in terms of  and  simplify to

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