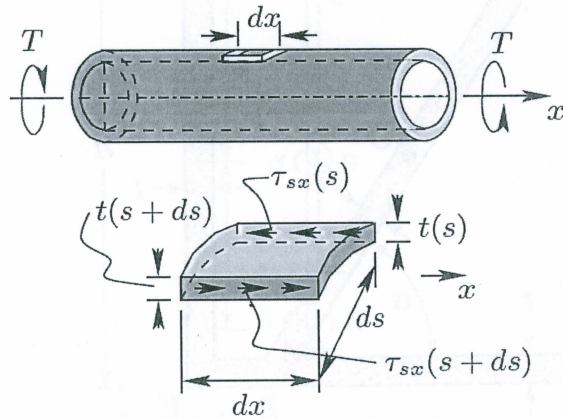
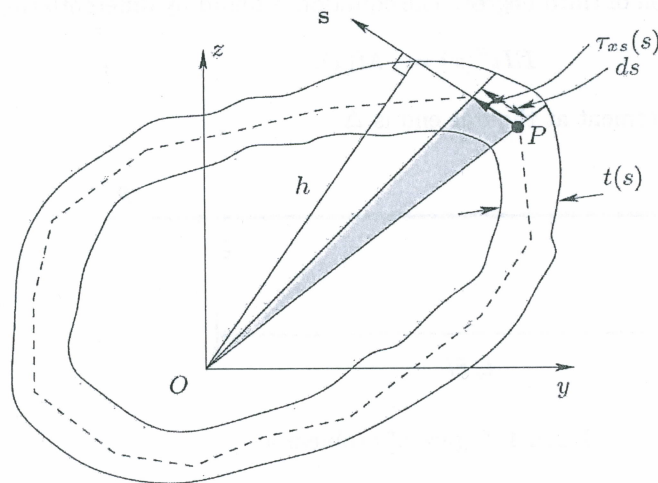


**Problem 5 (a)** The thin walled member presented in Fig. 5 is subjected to a torque  $T$ . The stresses for a small element are also presented in the figure. Examine the equilibrium of the element, and form the definition of the shear flow  $q$ . (3p)



Kuva 5: Figure of problem 5a

(b) A cross-section of a thin walled member is presented in Fig. 6. A shear stress  $\tau_{xs}(s)$ , where  $s$  is the coordinate along the center of the wall, is acting at point P. Examine the moment  $dT$  at point O, caused by the force acting in the element  $ds \cdot t(s)$  and derive the equation  $T = 2qA$ . (3p)



Kuva 6: Figure of problem 5b