

Sec.10

Normal and shear stresses on an inclined plane

Equilibrium of **forces** on a triangle

Axial deformation

Torsional deformation

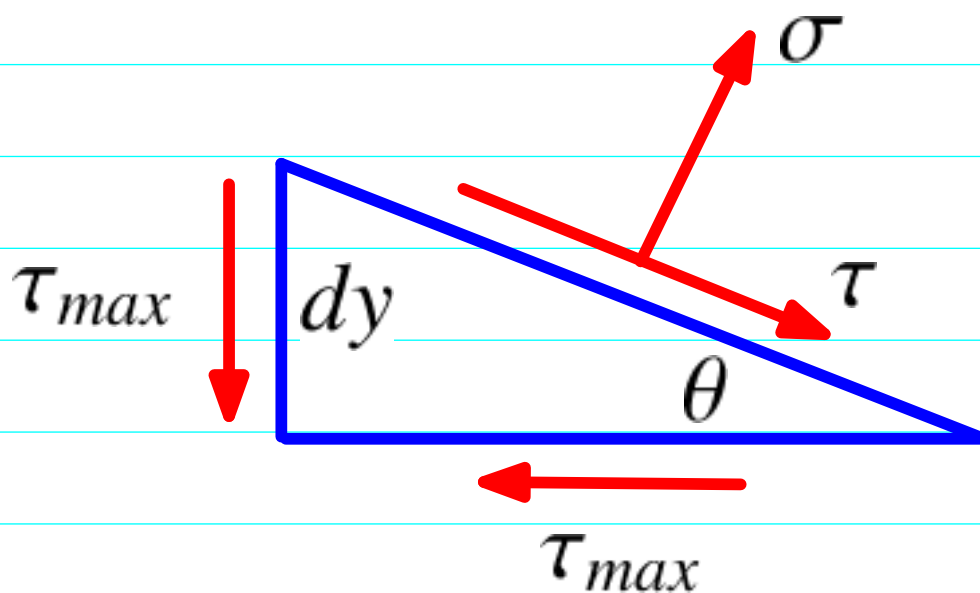
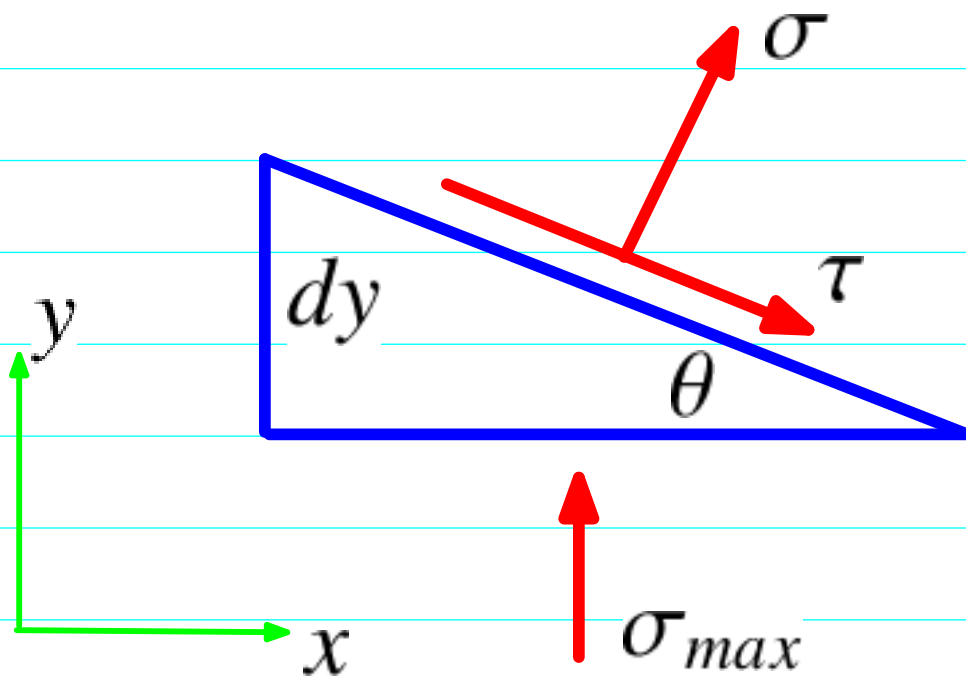
"Intelligence consists of this; that we recognize the similarity between different things, and the difference between similar things."

Baron de la Brède et de Montesquieu (1689-1755)
quoted in [Quantum field theory, E. Zeidler, 2008, p.175]

Pb-10.1:

Find the normal and shear stresses (σ , τ) on the inclined facet in these triangles, with thickness t , angle θ , vertical edge dy , and given normal stress σ_{max} and shear stress τ_{max} .

Are the stresses depending on t and dy ?



For each of the above two triangles, deduce the normal and shear stresses for the following angles:

$$\theta = 30^\circ$$

$$\theta = 30^\circ \quad (1)$$

$$\theta = 45^\circ$$

$$\theta = 45^\circ \quad (2)$$