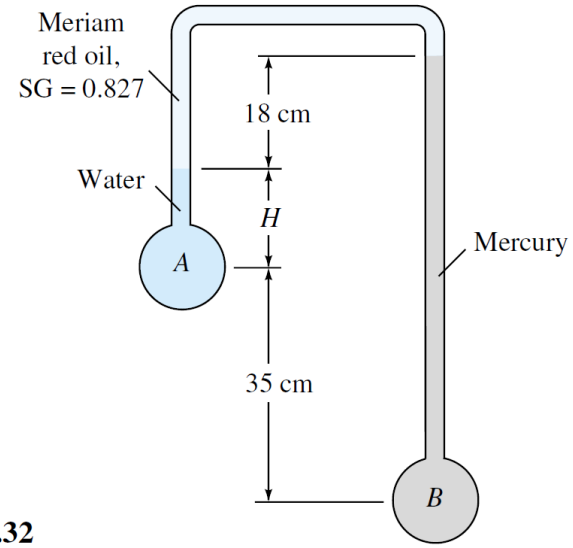
NTNU

TEP4105: Fluidmekanikk

Øving 3: Høst 2015

White 2.36 i 7. utgave (2.32 i 6. utgave)

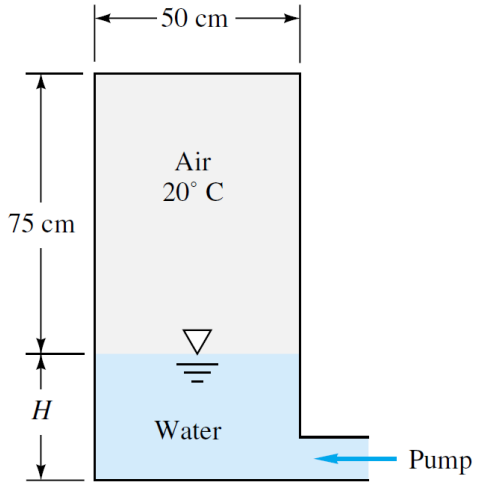
P2.32 For the inverted manometer of Fig. P2.32, all fluids are at 20°C. If $p_B - p_A = 97$ kPa, what must the height H be in cm?



P2.32

White 2.52 i 7. utgave (2.47 i 6. utgave)

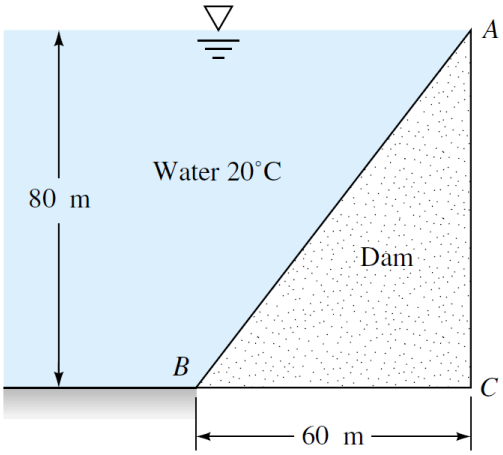
P2.47 The cylindrical tank in Fig. P2.47 is being filled with water at 20°C by a pump developing an exit pressure of 175 kPa. At the instant shown, the air pressure is 110 kPa and $H = 35$ cm. The pump stops when it can no longer raise the water pressure. For isothermal air compression, estimate H at that time.



P2.47

White 2.73 i 7. utgave (2.66 i 6. utgave)

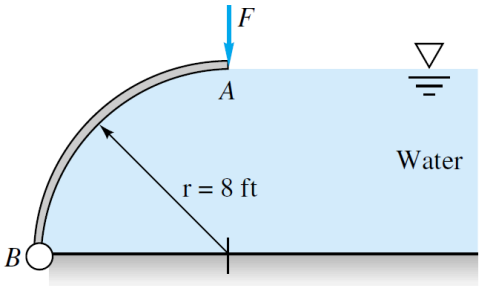
P2.66 Dam *ABC* in Fig. P2.66 is 30 m wide into the paper and made of concrete (SG = 2.4). Find the hydrostatic force on surface *AB* and its moment about *C*. Assuming no seepage of water under the dam, could this force tip the dam over? How does your argument change if there is seepage under the dam?



P2.66

White 2.93 i 7. utgave (2.83 i 6. utgave)

***P2.83** Gate *AB* in Fig. P2.83 is a quarter circle 10 ft wide into the paper and hinged at *B*. Find the force *F* just sufficient to keep the gate from opening. The gate is uniform and weighs 3000 lbf.



P2.83