

Homework problems on Fluid Dynamics

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T-tube.tex

Draining of a T tube

A vertical tube of constant cross sectional area A branches off at the lower end into two horizontal tubes. The cross sectional area of the branches OB and OB' are both $A/2$. At the points of branching there are two valves.

With the valves closed, the vertical tube is filled with water to the height H . At $t = 0$ the valves are suddenly open. Find the motion in the vertical and horizontal tubes as a result of gravity. Ignore viscosity and treat the flow as one dimensional and transient.