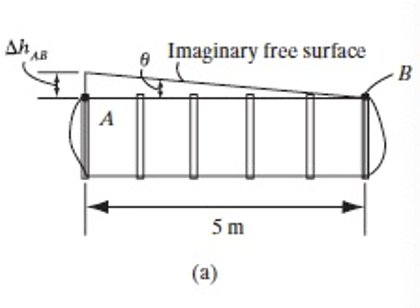
Solution for HW2

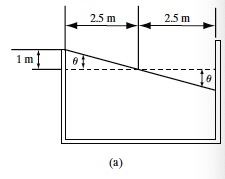
**S2.1**

The imaginary surface of milk in the accelerated tank is shown in Fig. a.



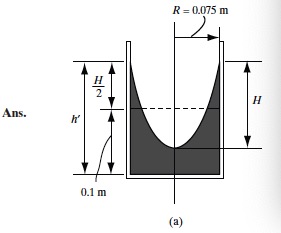
**S2.2**

When the tank accelerates, the water spill from the left side wall. The surface of the water under this condition is shown in Fig. a.



**S2.3**

From Fig. a, we observe that



**S2.4**

The horizontal component of the resultant force is equal to the pressure force acting on the vertically projected area of the gate. Referring to Fig. a.

The vertical component of the resultant force is equal to the weight of the imaginarycolumn of water above the gate (shown shaded in Fig.a) but acts upward.

The magnitude of the resultant force is

Referring to the FBD of the gate shown in fig d,

Also the acts toward the point O, so it doesn’t provide torque

