NAME

Fluids-ID

Quiz 2. A rectangular gate 6ft tall and 5ft wide in the side of an open tank is held in place by force F as indicated in the Figure. The weight of the gate is negligible, and the hinge at O is frictionless.

(a) Determine the water depth, h, if the resultant hydrostatic force of the water acts 2.5 ft above the bottom gate. (Hint: $I_{xc} = \frac{bh^3}{12}$)

(b) Determine the magnitude of the resultant hydrostatic force.

Note: Attendance (+2 points), Format (+1 point)