

## USEFUL RESOURCES

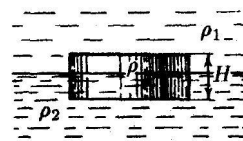
The updates, homework assignments, and useful links for APC can be found on SchoolNova's web page:

[https://schoolnova.org/nova/classinfo?class\\_id=adv\\_phy\\_club&sem\\_id=ay2020](https://schoolnova.org/nova/classinfo?class_id=adv_phy_club&sem_id=ay2020)

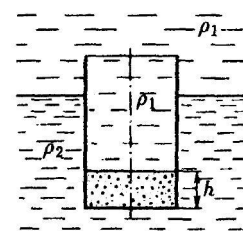
The practical information about the club and contacts can be found on the same web page.

## TODAY'S MEETING

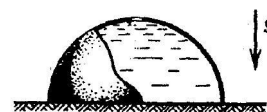
1. Some body placed in the water weighs 3 times less than it weighs in the air. What is that body's density?
2. A puck with density  $\rho$  floats at the interface of two liquids with densities  $\rho_1 < \rho < \rho_2$ . Height of the puck is  $H$ . Find which part of the puck is immersed in the lower liquid.



3. A thin-walled glass of mass  $m$  floats at the interface of two liquids with densities  $\rho_1$  and  $\rho_2$  such that  $\rho_1 < \rho_2$ . Find how deeply is the glass immersed in the lower liquid if glass's bottom has height  $h$  and area  $S$  and the glass is filled with the liquid of density  $\rho_1$ .



4. Communicating vessels have diameters  $d_1$  and  $d_2$ . There is liquid of density  $\rho$  in them. Find by how much will the liquid level rise if one puts a body of mass  $m$  with density less than  $\rho$  in one of the vessels?
- \*5. A thin-walled metal hemisphere with a little hole at the top rests on a table. Hemisphere's edges fit snugly against the table. Water is being poured inside through the hole and when it rises all the way to the hole, it lifts the hemisphere and starts flowing underneath. Find the mass of the hemisphere if its' internal radius is  $R$  and density of water is  $\rho$ .



## FOR THE NEXT MEETING

**IMPORTANT:** The next club's meeting is at 3:00pm, via Zoom, on Sunday, **October 4**.