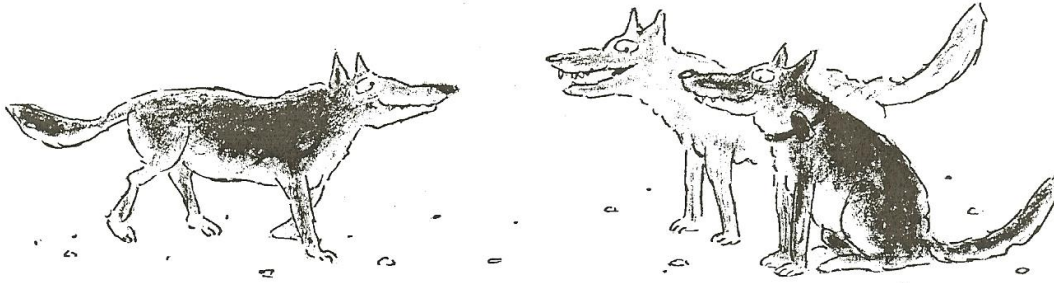


AP 2 Fluids WS 2

Como te llamas? _____

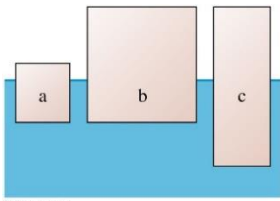
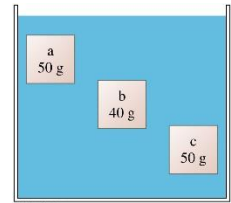


"Say something dirty into his radio collar."

S. GROSS

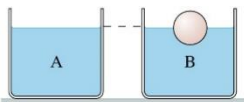
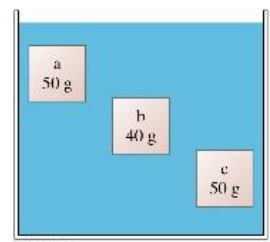
We can forgive a child who is afraid of the dark; the real tragedy of life is when men are afraid of the light. -Plato

1. Blocks a, b, and c in figure 15.7 have the same volume. Rank in order, from largest to smallest, the sizes of the buoyant forces F_a , F_b , and F_c on a, b, and c. Explain. (a and c are 50 g, b is 40 g)

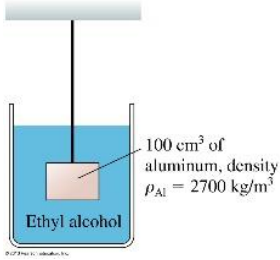


2. Rank in order, from largest to smallest, the densities of the blocks a, b, and c in the figure on the left. Explain.

3. Blocks a, b, and c in the figure on the right have the same density. Rank in order, from largest to smallest, the sizes of the buoyant forces F_a , F_b , and F_c on a, b, and c. Explain.



4. The two identical beakers in the figure on the left are filled to the same height with water. Beaker B has a plastic sphere floating in it. Which beaker, with all its contents, weighs more? Or are they equal? Explain.



5. What is the tension of the string in the figure showing 100 cm^3 of aluminum with a density of 2700 kg/m^3 immersed in Ethyl alcohol?
6. A 5.0 kg rock whose density is 4800 kg/m^3 is suspended by a string such that half of the rock's volume is under water. What is the tension in the string?
7. An 85 kg really smart dude decides to go floating aloft in his 4.5 kg lawn chair. He plans to use helium balloons to provide buoyancy. He carries along a pellet gun (to shoot out balloons so he can come down later), a six pack, and some sandwiches—total mass 5 kg . A balloon and string has a mass of 40 g . He inflates the balloons so that each has a diameter of 68 cm . How many balloons does he need to get off the ground?
8. A solid brass sphere has a diameter of 5.50 cm . It is immersed in water. Find (a) the buoyant force acting on the sphere and (b) the apparent weight of the sphere in water.
9. A solid chunk of iron is floating in mercury. What percent of the iron is submerged?