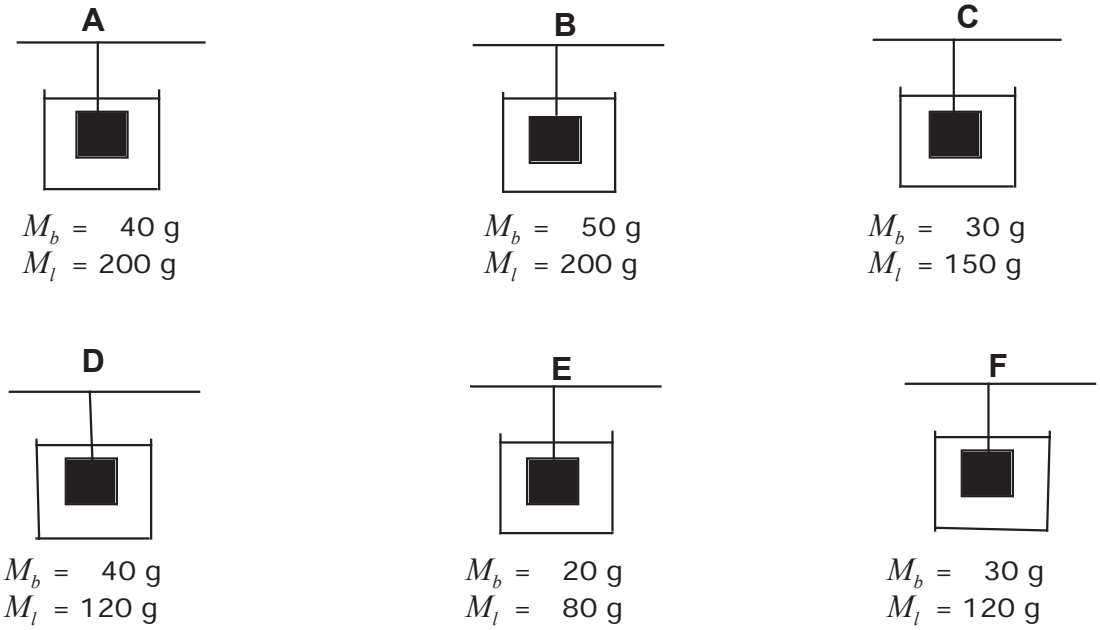
Blocks Suspended in Liquids—Buoyant Force [98]

Shown below are six containers that contain various liquids. Blocks of various solids are suspended in the liquids by being hung from a supporting rod. All of these blocks are the same size, but they have different masses (labeled as M_b) since they are made of different materials. All of the containers have the same volume of liquid, but the masses of these liquids vary (labeled M_l) since the liquids are different. Specific values for the masses of the blocks and the liquids are given in each figure. The volume of the blocks is one-fifth the volume of the liquids.

Rank these situations, from greatest to least, on the basis of the buoyant forces on the blocks. That is, put first the block that experiences the greatest buoyant force, and put last the block that experiences the smallest buoyant force.



Greatest Force 1____ 2____ 3____ 4____ 5____ 6____ Least Force

Or, all of the blocks experience the same buoyant force. _____

Or, there is no buoyant force on any of these blocks. _____

Please carefully explain your reasoning.

How sure were you of your ranking? (circle one)

Basically Guessed				Sure				Very Sure	
1	2	3	4	5	6	7	8	9	10

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