

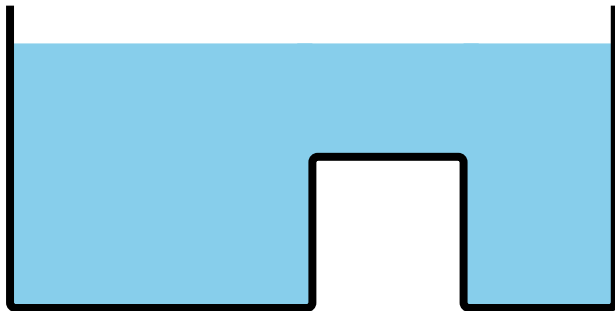
Warm Up Question 1

Two different cylinders, one red and the other green, are filled with water. The base of the red cylinder has twice the area of the base of the green cylinder. They are filled to the same depth. Is the mass of the water in the red cylinder smaller than, larger than or the same as that in the green cylinder? Assuming that the top of each cylinder is at atmospheric pressure, is the pressure at the base of the red cylinder smaller than, larger than or the same as that in the green cylinder? Explain your answers.

1. Mass larger in red. Pressure smaller in red.
2. Mass larger in red. Pressure larger in red.
3. Mass larger in red. Pressure same.
4. Mass same. Pressure same.

Question 1

A vessel contains water as illustrated. The area of the base on the left is 1.0 m^2 and that of the right base is 0.5 m^2 .



The force exerted by the water on the right base is measured to be 10 N . What is the force exerted by the water on the left base?

1. 0 N
2. 5 N
3. 10 N
4. 20 N

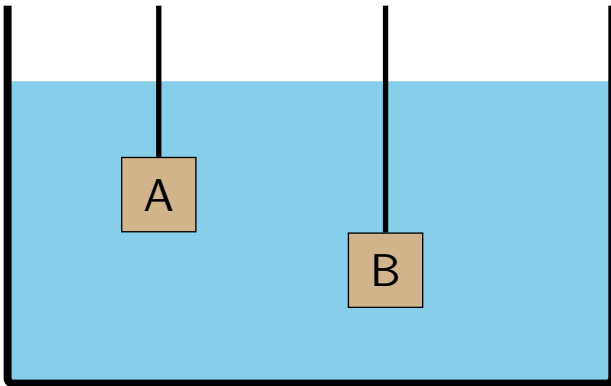
Warm Up Question 2

You would like to scuba dive in either a freshwater lake or a saltwater lake. In either case you dive down until you reach a point where the pressure becomes intolerable for your ears (this pressure is the same for fresh and salt water). Will you be able to dive deeper in saltwater or freshwater before the pressure becomes intolerable? Assume that the surfaces of both bodies of water are at sea level. Explain your answer.

1. Deeper in freshwater. Density of freshwater lower.
2. Deeper in saltwater. Density of saltwater higher.
3. Same depth.

Question 2

Two blocks are suspended by strings and held at rest in a fluid as indicated. The density of block A is larger than that of B but their volumes are the same.



Which of the following is true?

1. Buoyant force on A is the same as on B.
2. Buoyant force on A is larger than on B.
3. Buoyant force on A is smaller than on B.