

Buoyancy Practice Problems

1. What will happen if a solid object immersed in a fluid weighs more than the weight of the fluid it displaces?
 - a. The object will rise to the surface
 - b. The object will be neutrally buoyant
 - c. The object will move up and down in the fluid
 - d. The object will sink
2. The materials used to make a steel ship have a density greater than water. How is it possible that a ship floats in water?
 - a. Helium and hydrogen is mixed with the steel
 - b. The steel is made of many layers pressed together rather than solid sheets of steel
 - c. Steel ships are shaped to displace an amount of water with a weight that is greater than the weight of the ship
 - d. The steel is raised to a high heat first to make it less dense before it is solidified for shipbuilding.
3. What will happen if the weight of a submerged (underwater) object is greater than the buoyant force of the liquid?
 - a. The object will dissolve
 - b. The object will sink
 - c. The object will float
 - d. The object will move up and down in the liquid.
4. What is an object doing if its weight is equal to the buoyant force acting on it?
 - a. It will sink
 - b. It will float
5. What is an object doing if its weight is greater than the buoyant force acting on it?
 - a. It will sink
 - b. It will float
6. What is an object doing if its weight is less than the buoyant force acting on it?
 - a. It will sink
 - b. It will float

7. An object weighs 12N in the air, but only 5N when in water. The object displaces 12mL of water when placed in the fluid. What is the buoyant force on the object?
- 12N
 - 7N
 - 5N
 - 17N
8. What is the volume of the object in Question #7?
- 12 mL
 - 15 mL
 - 5 mL
 - 50 mL
9. What happens to the object in question #7 when you put it in the water? Remember, the weight in the water was 5N...compare that to the buoyant force.
- It will sink
 - It will float
 - It will move up and down in the water
10. A ship that weighs 1,000N displaces 1500L of water that weighs 950N. What is the buoyant force on the ship and will it sink or float?