

Station I—Buoyancy

1. Fill the small beaker with water. Immerse it into the large beaker. Keeping the small beaker underwater, lift it until its rim is level with the surface of the water.

Does the small beaker filled with water exert a downward force? _____

2. Now lift the small beaker until the bottom is almost out of the water.

Does it exert a downward force? _____

3. Draw a diagram in the space below of the small beaker with its bottom almost out of the water as previously described. Identify, using arrows (vectors), the direction of each of the forces acting on the object(s).

4. Now empty the small beaker. Turn it upside down and push it to the bottom of the larger beaker. The small beaker should be filled with air.

Is the small beaker of air exerting a force? _____

5. Draw a diagram in the space below of the small beaker of air in this position. Identify, using arrows (vectors), the direction of each of the forces acting on the object(s).