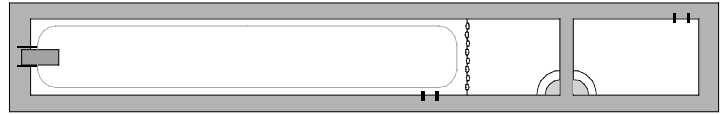


PHYZ SPRINGBOARD: EUREKA, I HAVE FOUND IT!



THE CROWN AFFAIR

A crown is hung from a spring scale and found to have a weight of 8.54 N. When the hanging crown is completely immersed in water, the reading on the spring scale drops to 8.09 N.

1. What is the mass of the crown?
2. What is the buoyant force acting on the crown?
3. What weight of water was displaced by the crown when the crown was immersed?
4. What is the mass of the water that was displaced?
5. What is the volume of the crown?
6. What is the density of the crown?
7. Is the crown made of gold? Cite your evidence.