

Problems

Solve the problems below and select the closest answer to your solution.

1. Atmospheric pressure at sea level is 14.7 psi. At what depth does the pressure of sea water plus the pressure of the air at the surface equal three atmospheres of pressure. Hint: sea water weighs 64 lbs/ft³

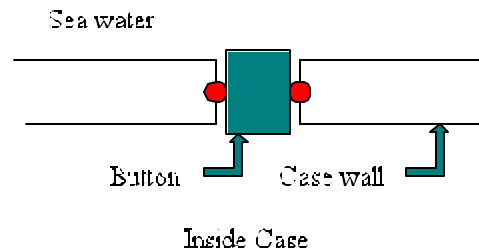
10 feet 99 feet 33 feet 66 feet

2. A box that is 2 feet on each side weighs 500 pounds. Will it sink or float in fresh water (62.4 lbs/ft³)?

It will sink It will float

3. The box in problem 2 is placed in sea water (64 lbs/ft³). Will it sink or float?

It will sink It will float



4. The button in the diagram at the left is 0.25 inches in diameter. What will be the force on the button at 150 feet of depth.

13.1 lbs 2.24 lbs 3.27 lbs
 52.28 lbs 26.14 lbs

5. A camera case shown on the right is made of plastic with a maximum working stress of 1000 psi. What thickness of material should be used to create the case if the case will be used at 150 feet of depth in sea water?

0.27 inches 0.09 inches 0.13 inches
 0.17 inches

