Problem 1
A window has dimensions 1.8 m by 0.90 m. Due to a strong wind, the outside pressure drops to 0.96 atm while the inside pressure remains at 1.00 atm. What force (size and direction) must the frame in which the window is mounted exert on the window?

Problem 2
The Alvin is a Navy owned deep-ocean research vessel that can carry two scientists and a pilot. First commissioned in 1964 it has been refit and upgraded over the years. An upgraded personnel sphere is currently being tested for its new design depth of 6000 m. (Other vessels have gone deeper, but these vessels are much less maneuverable.)

What is the pressure in atmospheres at 6000 m?

Problem 3
What is the force exerted by the water on one side of a pool that is 3.0 m wide and filled to a depth of 2.4 m?