1. The density of saltwater in the Dead Sea is higher than that of fresh water $\left(1,240 \mathrm{~kg} / \mathrm{m}^{3}\right)$, which makes it easier for boats to float.
a. What would be the water pressure 30 m below sea level?
b. At what depth, below sea level, would a pressure of 90 kPa exist?
2. A swimmer dives 7.0 m below the surface of a pool. If the swimmer's ear drum has a cross-sectional area of $4.5 \times 10^{-5} \mathrm{~m}^{2}$, how much force is exerted on the drum?
3. A sheet of paper has dimensions of $21.0 \mathrm{~cm} \times 29.7 \mathrm{~cm}$ and lays flat on a horizontal floor. How much force is exerted on the paper by the surrounding air?
4. A U-shaped tube is used to hold water. The top-left opening is sealed, while the top-right opening is open to the atmosphere above. Positions A, B and C are labeled and different points throughout the tube. Rank these positions from greatest pressure to least.

5. A water tank is built in the shape of a cube with each side length equal to 25 cm , as shown below. The tank is completely filled with water and is placed on a horizontal floor.
a. What is the gauge pressure at the bottom of the tank from the water?
b. What is the atmospheric pressure at the bottom of the box?
c. What is the absolute pressure at the bottom of the box?

