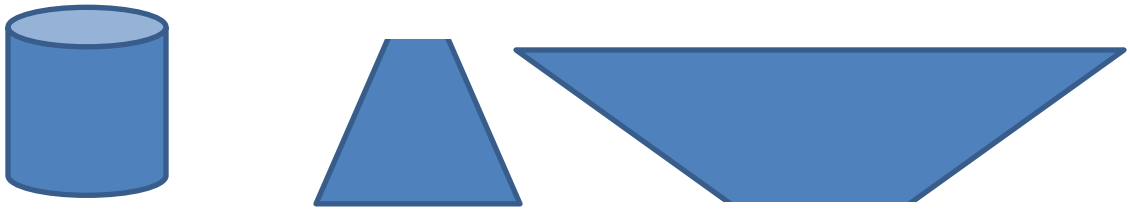
How large a force does the still air in a room exert on the inside of a window pane that is 40 cm x 80 cm?

Find the density and specific gravity of ethyl alcohol if 63.3 g occupies 80 ml.

When a submarine dives to a depth of 120 m, how large a pressure is its exterior surface subjected? The density of seawater is 1.03 g/cm^3.

A vertical test tube has 2 cm of oil (specific density = 0.8) floating on 8 cm of water. What is the pressure at the bottom of the tube due to the fluid in it?

Three containers have bottoms with the same area (say 10 cm^2, but they have different shapes as shown. They are filled to the same height with water.



A. Rank the pressure at the bottom of each container from least to greatest. (Explain your answer)

B. Rank the force applied at the bottom of each container from least to greatest. (Explain your answer)

When one weighs an object on a scale, they actually measure the normal force applied by the scale.

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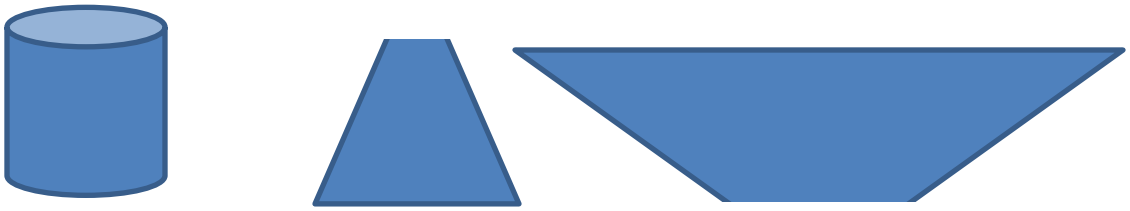

Since the pressure depends only on height the fluid in each container applies the same force on the bottom of the container as the area of each bottom is the same.

A. If they are placed on scales, rank the three by the readings?

B. When one weighs an object on a scale, they actually measure the normal force applied by the scale. The force pushing down on the bottom is the same, why isn't the normal force required to keep the bottom in equilibrium the same (ie Why don't the scales read the same)? Note: Weight of the fluid has already been accounted for in pressure. You must explain using Newton II.

The specific density of ice is 0.917. What percentage of the volume of ice will be above the water when it floats in fresh water.