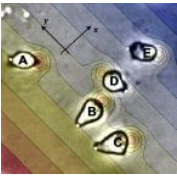


Physics 131-Physics for Biologists I



Professor: Wolfgang Losert
wlosert@umd.edu

Midterm 2: November 8

Office Hours before Midterm 2:

Course Center: Monday Nov 4, 11am-12.30pm

3341 AV Williams: Wednesday Nov 6, 11.30am-1pm

For Homework: Assemble images into a pdf: Use Adobe Acrobat which can be downloaded for FREE from the Terpware store!

Foothold ideas: Pressure

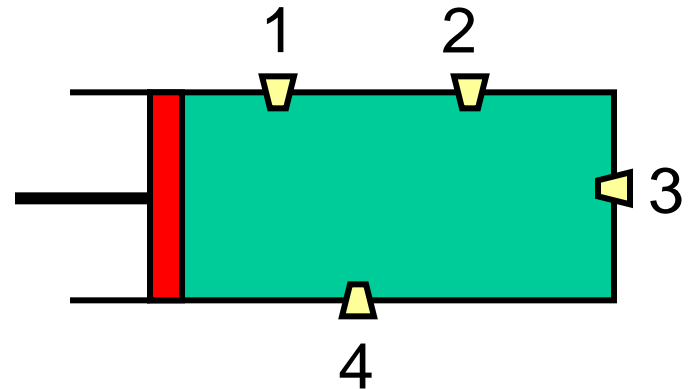
- At a boundary or wall, the pressure in a constrained fluid creates a force perpendicular to the surface.

$$\vec{F} = p\vec{A}$$

- The constrained gas or liquid has an internal pressure, meaning that it would create a force against any surface placed anywhere inside the gas or liquid in any orientation.

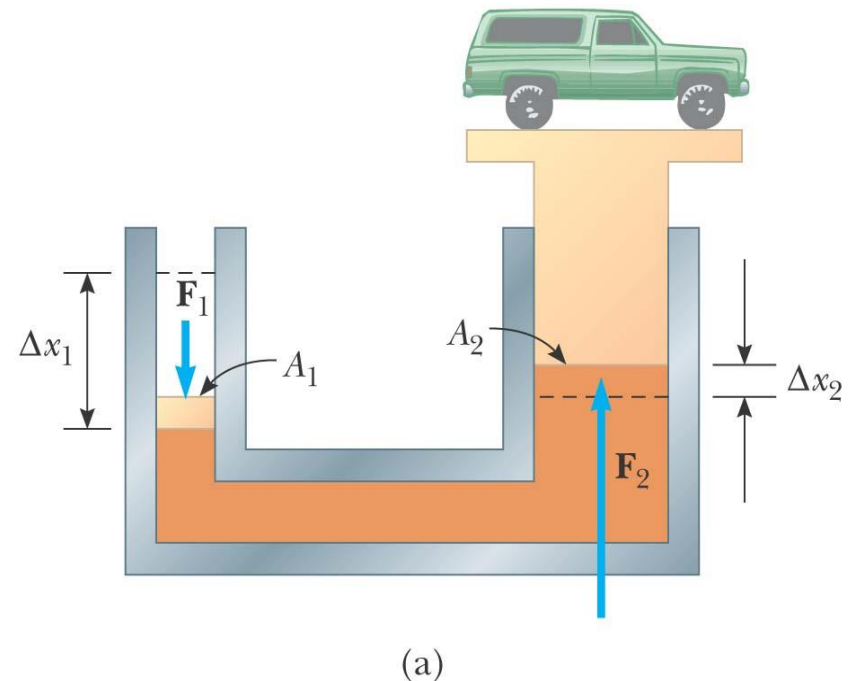
A cylinder with a movable piston is filled with a uniform fluid. If the corks are all in equally tightly, which are most likely to pop when we push down on the piston?

1. Cork 1
2. Corks 1 & 2
3. Cork 3
4. Cork 4
5. Some other combination
- 6. All**
7. None



A container is filled with oil and fitted on both ends with pistons. The area of the left piston is $(0.1 \text{ inch})^2$; that of the right piston $(10 \text{ inch})^2$. What weight must I place on the piston to balance the weight of a 1 ton (1000 kg) car?

1. 0.1 kg
2. 10 kg
3. 1,000 kg
4. 10^6 kg
5. 10^8 kg
6. insufficient information



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**Whiteboard,
TA & LA**