■ A narrow tube with a valve connects two soap balloons, one large, one smaller When the valve is opened connecting the two balloons
-1 . The balloons will even out in size.

- 2. The larger balloon will grow.
-3 . You can't tell from the information given.

http://www.youtube.com/watch?v=yURomiwg9PE\&feature=related

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 hit the piston with a hammer?

4. Cork 4
5. Some other combination
6. All
7. None

## Consider the containers at right.

 Which of the following correctly compares the pressure ( $P$ ) of the water at the bottoms of the containers?$$
\text { 1. } P_{1}=P_{2}=P_{3}+\text { 2. } P_{3}>P_{1}>P_{2} \text { 3. } P_{3}>P_{1}=P_{2}+\text { 4. } P_{2}>P_{1}>P_{3}+P_{1}=P_{2}>P_{3}
$$


(1)

(2)

(3)

Three cubes of equal volume are hung on strings. A and B have the same mass and block C has less. The blocks are lowered into a fish tank and they hang at rest as shown.

How does the force exerted by the water on the top surface of cube A compare to the force exerted by the water on the top surface of cube $B$ ?
-1 . The force on A is bigger
-2 . The force on $B$ is bigger
-3 . They are the same.


Three cubes of equal volume are hung on strings. A and B have the same mass and block C has less. The blocks are lowered into a fish tank and they hang at rest as shown.

How does the force exerted by the water on the top surface of cube A compare to the force exerted by the water on the top surface of cube C ?
-1 . The force on A is bigger

- 2. The force on C is bigger
-3 . They are the same.


Three cubes of equal volume are hung on strings. A and $B$ have the same mass and block C has less. The blocks are lowered into a fish tank and they hang at rest as shown.

How do the buoyant forces exerted by the water on the three cubes rank?
$-1 . \mathrm{BF}_{\mathrm{B}}>\mathrm{BF}_{\mathrm{A}}=\mathrm{BF}_{\mathrm{C}}$

- 2. $\mathrm{BF}_{\mathrm{B}}=\mathrm{BF}_{\mathrm{A}}>\mathrm{BF}_{\mathrm{C}}$
$-3 . \mathrm{BF}_{\mathrm{B}}>\mathrm{BF}_{\mathrm{A}}>\mathrm{BF}_{\mathrm{C}}$
-4. $\mathrm{BF}_{\mathrm{A}}=\mathrm{BF}_{\mathrm{B}}=\mathrm{BF}_{\mathrm{C}}$
-5 . Some other ranking


■ A ball floats in a beaker of water. The ball sinks in a beaker of mineral spirits. The mineral spirit will float above the water when poured slowly on top of water. If the ball is floating on the water $2 / 3$ of the way under the water, what will happen to the ball when mineral spirits is slowly poured on top of the water?
Relative to the top of the liquid,

- 1.The ball will go down.
-2 . The ball will go up.
-3 . The ball will stay at the same level.

