

Answer #5

The answer is (a); the smaller balloon will get smaller and blow up the bigger one, as seen in the mpeg video clip below.



This is a problem involving surface tension. To answer the question we ask another: When you blow up a balloon, when is it hardest to blow? As you probably realize, it is much harder to blow air into your average balloon when it is small, and gets easier as the balloon gets larger - until it gets near the bursting point. This is because when the balloon is smaller the rubber membrane is thicker, creating more surface tension, which you must compensate by the pressure that you exert to fill the balloon with air.

The same idea applies to soap bubbles. After a soap bubble is formed, it always contains the same amount of material, so as it gets larger its surface tension decreases.