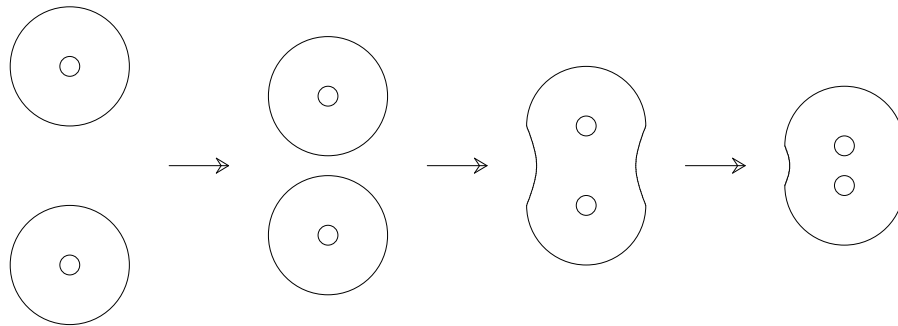


CS 633 3D Computer Animation

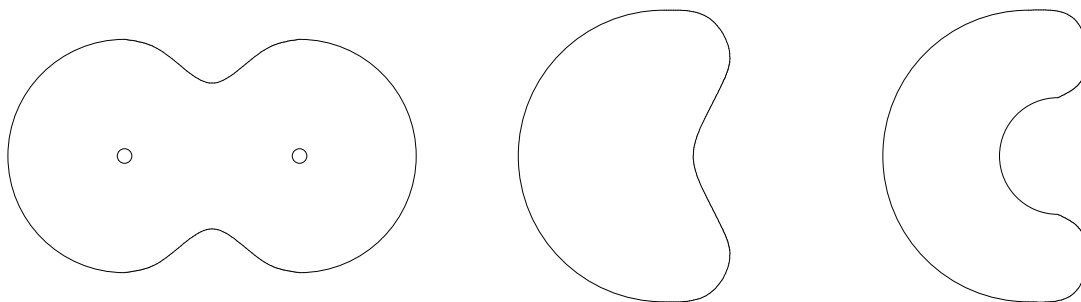
Homework Assignment 9 (40 points)

Due: N/A

1. One of the reasons that implicit surfaces are good for animation purpose is because they are useful for modeling natural phenomenon. How would you use implicit surfaces to model the merging of two water drops? What kind of implicit surfaces would you use in such a process? (10 points)



2. How would you use implicit surfaces to model the following shapes? What kind of implicit surfaces would you use in such a process? (10 points)



3. A technique to simulate a 'bouncing ball' is given in class. The technique is volume-preserving based, and is developed for triangle meshes. How is the volume of a closed 3D triangle mesh computed in this technique? (10 points)

4. When we simulate a 'bouncing ball', for each frame, we should always use the original mesh representation of the ball to do the computation, not the deformed representation of the previous frame. Why? (10 points)