1. Imagine a circular cone with base radius r and height h. At what vertical height would you have to cut off the cone's top to get two pieces of equal volume?

2. A pie dish has base diameter 8 inches, top diameter 10 inches, and height 2 inches. What is the volume of the dish?

   Note: I actually found myself doing more or less this calculation this summer, when I was trying to fix a blueberry pie recipe!

3. A spherical balloon with radius 3 inches is partially filled with water. If the water in the balloon is 4 inches deep at the deepest point, how much water is released when the balloon hits the wall and breaks?