

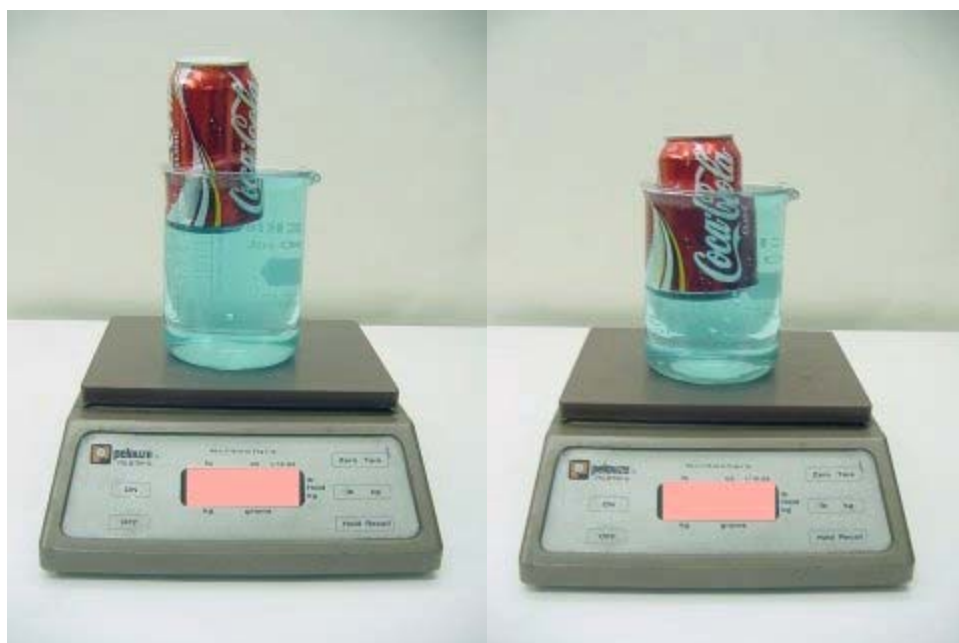
## Question #306

Shown in the photograph below is a **full** beaker of (blue) water on a digital scale. The mass of the beaker of water, filled completely to the spout, is exactly 1.414 kg. Note that if anything is put into the beaker it will cause water to flow out of the spout until equilibrium is reached.



Below is the same beaker of water, still filled to the brim as in the case above, but with three Cola cans, apparently having different masses, in the beaker. It appears that the can at the left is immersed about one-third of its height in the water and the can at the center is immersed about two-thirds of its height, but the can at the right is totally immersed in the water, and is resting on the bottom of the beaker.

The question this week is to rank the four scale readings, including the beaker with no Cola can, in order of mass, from heaviest to lightest.



Rate the mass reading of the electronic scale, from highest to lowest, for the following cases:

- (a) water only.
- (b) Cola can immersed to  $1/3$  of its height.
- (c) Cola can immersed to  $2/3$  of its height.
- (d) Cola can resting on bottom of the beaker.

Click here for [Answer #306](#) after February 18, 2008.

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For questions and comments regarding the *Question of the Week* contact [Dr. Richard E. Berg](#) by e-mail or using phone number or regular mail address given on the [Lecture-Demonstration Home Page](#).