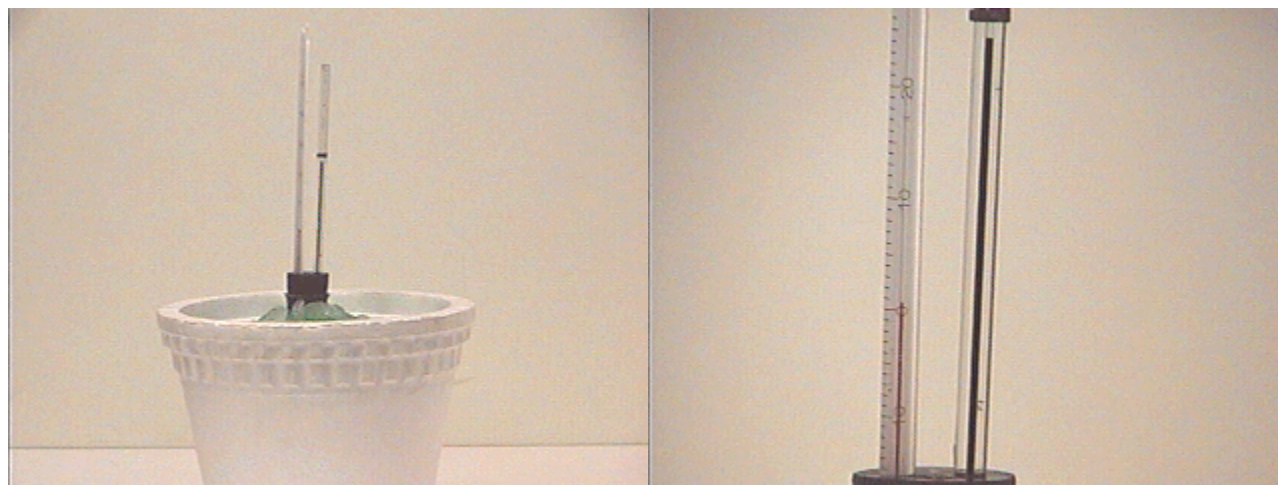


## Question #139

A flask containing green water is resting in a styrofoam bucket of ice water as seen in the photograph at the left below. A cork seals the top of the flask so that there is no air on top of the water. Inserted into the water are a thermometer and a capillary tube, as seen in the photograph at the right. Some of the water from the flask extends into the capillary tube.



If the water in the flask were to expand, the green water level would rise higher into the capillary tube. On the other hand, if the water in the flask were to contract, the green water level would fall lower in the capillary tube. The flask used is made of quartz, which has a very small coefficient of thermal expansion, so if the flask and the water change temperature the predominant effect will be due to the expansion or contraction of the water.

Suppose that the flask is now removed from its ice water bath and allowed to slowly warm up. What will the water level in the capillary tube do as the water in the flask warms up? Will it:

- (a) rise.
- (b) fall.
- (c) rise for a bit and then fall.
- (d) fall for a bit and then rise.
- (e) remain the same.

Click here for [Answer #139](#) after February 17, 2003.

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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](#).