

# Pi Mu Epsilon

## Problem of the Month

### February 2017

A magician has lined up 178 identical bottles. Of them, 177 bottles of water and one bottle contains a special elixir immediately indistinguishable from water. Starting fifteen minutes after drinking any amount of the elixir, however, a person will begin to levitate.

What is the minimum number of Longwood students necessary to determine which bottle contains the elixir in fifteen minutes?

Problem of the Month Rules:

- ⌘ Submissions must include a complete mathematical justification along with the answer.
- ⌘ Submissions may only be made by individuals or groups of two and must be dated.
- ⌘ Due date: February 27, 2017 before 5 p.m.; they may be given to Dr. Phillip Poplin or Dr. David Shoenthal.

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