MAA Metro NY Section
Problem of the Month

March 2025

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Imagine that you have three boxes. One contains two black marbles, one contains two white marbles, and the third contains one black marble and one white marble. Previously the boxes were labeled with their contents (BB, WW, and BW), but someone switched the labels in such a way that every box is now labeled incorrectly. You are allowed to draw one marble at a time out of any box, without looking inside, and by this process of sampling you are to determine the contents of all three boxes. What is the smallest number of drawings needed for an algorithm to do this?

AI-assisted or AI-generated solutions will not be accepted.

Solutions are due the last day of the month! Send your solution as a PDF file, accompanied by any references if applicable, to `maanyproblems@gmail.com`.

Problem of the month main page:

`http://sections.maa.org/metrony/problemofthemonth.html`