Advanced Calculus II, Fall 2022, Worksheet for Lecture 6

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Name: _____

Discussing the problems with other people is encouraged,
but you must write up your own work independently!

1. Imagine that you have three boxes, one containing two black marbles, one containing two white marbles, and the third, one black marble and one white marble. The boxes were labeled for their contents—BB, WW and BW—but someone has switched the labels so that every box is now incorrectly labeled. You are allowed to take 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 to do this? Explain.