

NMSU MATH PROBLEM OF THE WEEK

Solution to Problem 4

Fall 2025

Problem 4

There are three boxes, exactly one of which contains a prize. Each box has a label with a visible statement on it, and exactly one of the statements is true.

■ Gold box label: The prize is in this box.”

■ Lead box label: The prize is not in the gold box.”

■ Silver box label: The prize is not in this box.”

Which box contains the prize? Justify your answer.

Solution. To simplify notation, let G be the Gold box label, L the Lead box label, and S the Silver box label. If G were true, then so would be S . But only one statement can be true. Thus, G must be false. But then L is true. Using again that only one statement can be true, we conclude that S must be false. Consequently, the prize is in the Silver box.