NMSU MATH PROBLEM OF THE WEEK

Solution to Problem 2

Fall 2025

Problem 2

A milkman has an 8L container filled with milk. In addition, he has a 5L container and a 3L container, both empty. A buyer asks him for 4L of milk. Is it possible to separate 4L of milk using only the containers the milkman has? Justify your answer.

Solution. Yes, it is possible. For example, the milkman could do the following:

Step 1: First pour 5L liters from the 8L container to the 5L container, and then 3L from the 5L container to the 3L container. This leaves 3L in the 8L container, 2L in the 5L container, and 3L in the 3L container.

Step 2: Next pour 3L from the 3L container back to the 8L container, then pour 2L from the 5L container to the 3L container, and then pour 5L from the 8L container to the 5L container. This leaves 1L in the 8L container, 5L in the 5L container, and 2L in the 3L container.

Step 3: Finally, pour 1L from the 5L container to the 3L container. This leaves 1L in the 8L container, 4L in the 5L container, and 3L in the 3L container.

The milkman can now hand the buyer 4L of milk from the 5L container.