5.NF.A Measuring Cups

Task

Lucy has measuring cups of sizes 1 cup, \( \frac{1}{2} \) cup, \( \frac{1}{3} \) cup, and \( \frac{1}{4} \) cup. She is trying to measure out \( \frac{1}{6} \) of a cup of water and says, "If I fill up the \( \frac{1}{2} \) cup and then pour that into the \( \frac{1}{3} \) cup until it is full, there will be \( \frac{1}{6} \) of a cup of water left."

a. Is Lucy's method to measure \( \frac{1}{6} \) of a cup of water correct? Explain.

b. Lucy wonders what other amounts she can measure. Is it possible for her to measure out \( \frac{1}{12} \) of a cup? Explain.

c. What other amounts of water can Lucy measure?