

# Story 3. The Fountain of Knowledge



6-oz glass



10-oz glass

During an incredibly elaborate hazing stunt during pledge week, Trey Sheik suddenly found himself alone in the Sahara Desert. His desire to become a fraternity brother was now overshadowed by his desire to find something to drink (these desires, of course, are not unrelated). As he wandered aimlessly through the desert sands, he began to regret his involvement in the whole frat scene. Both hours and miles had passed and Trey was near dehydration. Only now did Trey appreciate the advantages of sobriety. Suddenly, he came upon an oasis.

There, sitting in a shaded kiosk beside a small pool of mango nectar, was an old man named Al Donte. Big Al not only ran the mango bar but was also a travel agent and could book Trey on a two-humped camel back to Michigan. At the moment, however, Trey desired nothing but a large drink of that beautifully translucent and refreshing mangoade. Al informed Trey that he sold the juice only in 8-ounce servings and the cost for one serving was \$3.50. Trey frantically searched his pockets, and though he found much sand, he also discovered that he had exactly \$3.50.

Trey's jubilation at the thought of liquid coating his parched throat was quickly shattered when Al casually announced that he did not have an 8-ounce glass; all he had was a 6-ounce glass and a 10-ounce glass—neither of which had any markings on it. Al, being a man of his word, would not hear of selling any more or any less than an 8-ounce serving of his libation. Trey, in desperation, wondered whether it was possible to use only the unmarked 6- and 10-ounce glasses to produce exactly 8 ounces in the 10-ounce glass. Do you think it's possible? If so, explain how, and if not, explain why. This pledge-week prank does whet our appetites for a world of numbers.

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## Nudges:

- To solve this puzzle, combine trial and error with careful observation. As we observe the outcomes of various attempts, we can teach ourselves what may be possible. Try filling up the 10-ounce glass, and then use it to fill the 6-ounce glass. What do you have now—anything new?