You Probably Solved the Puzzle Based on Hansel and Gretel—Now Try This One Based on Chao Chong

As explained in the main article ("Critical Thinking"), when experimenters showed American and Chinese college students the puzzle that required a treasure hunter to make a sand trail to find his way out of a cave, about 75 percent of American, but only 25 percent of Chinese, college students solved it. When the college students were presented with the puzzle below, which is based on a Chinese folk tale, the percentages were reversed.

In a village by a river, the chief of a tribe had the responsibility of taking care of the tribe's sacred stone statue. It was the chief's custom every year to go down river to the next village to collect taxes. To assess the amount of taxes, the chief would ask for the statue's weight in gold coins. His method of measuring this amount was to put the statue in a large tub at one end of a hanging balance scale and hook the other end of the scale to another large tub. This second tub was filled with gold coins until the scale balanced the weight of the statue. During a recent trip to collect taxes, the chief forgot to bring his balance scale. Now the chief has a problem: How can he figure out how much gold to take to match the statue's weight without the benefit of a balance scale, a pulley system, or a conventional scale?

When you're ready to check your answer (or give up), read on. Here's the Chinese folk tale on which the puzzle is based:

Long ago in China, there lived a powerful emperor. Every year, the rulers of the surrounding countries had to give him jewelry, gold, cloth materials, and animals as presents. One day, a ruler of a southern country presented him with an elephant as a gift. The emperor was delighted to see the elephant and asked the ruler what the weight of the elephant was. The ruler was embarrassed because even the biggest scale he owned was too small to weigh the huge elephant. The emperor's youngest son, named Chao Chong, came up with an idea: "You could find a boat, put the elephant in it, and mark the new water level on the boat. Then, you could take the elephant out of the boat and put smaller stones into the boat until the water level reaches the same mark. Then, you could weigh those stones separately with a small scale. When you add up all the weights, you would know how heavy the elephant is." Everyone was surprised and impressed by the boy's solution.

-D.W.