Problem of the Week

Number Two

January 21, 2013

Here's a riddle for you: What looks like a box, smells like a lox, and flies? That's not the problem of the week, but I find it amusing.

Here's this week's problem:

Five pirates have one hundred gold pieces that they must divide among themselves. The pirates are numbered from one to five. They decide on the following scheme: The pirate with the smallest number proposes a way of dividing the coins. All of the pirates, including the proposer, then vote on it. If the proposal fails to get a clear majority, then the proposer is thrown overboard, and the process begins anew with the now smallest-numbered pirate making a new proposal. Note that if at any phase there are an even number of pirates, a tie vote results in the proposer being thrown overboard.

You can assume that each pirate operates according to three principles. Above all else, he wants to stay alive. After that, he wants to maximize the amount of gold he gets. Finally, given two proposals that involve him getting the same amount of gold, he will prefer the one that involves fewer pirates. (What can I say? Pirates are a bloodthirsty lot!) Your question is this: What division should Pirate One propose?

An amusing puzzle. Your only hint is the old adage that to know the beginning, sometimes you must first know the end. As for the opening riddle, the answer, *obviously*, is a flying lox box!

FOLLOW THESE INSTRUCTIONS TO THE LETTER: Place your full name and e-mail address in the top, right-hand corner of this page. If you are receiving course credit for this, please also indicate the professor and the course number. Write your answer on the back of this page. If there is any element of reasoning or calculation involved, then please also include a clear, brief explanation for your answer.

Solutions are due to Jason Rosenhouse by 5:00 on Friday, January 25. Papers may be handed to him directly, placed in the inbox outside his office, or left in his mailbox in the main office. One weekly winner will receive a five-dollar gift card from Starbucks. Winners will be drawn randomly from among the correct answers.