Paranoid Pirates 2011-02-07

The dread pirates Alonso, Bonzo, Condo, and Donko all lay claim to the bag-of-loot. Rather than die by the sword, they remember the method of the last diminisher from their college days, and agree to abide by its rules, since each one knows a secret strategy to always avoid being cheated. They choose an order to divide, and it comes up A, then B, then C, then D. Note that pirates are uniquely individual, and have vastly different ideas about the value of the loot.

Alonso goes first, but he has a nervous pang, a paranoid twitch, "What if they are all against me? What if they got here first and just tried to trick me into giving up my fair share?" Alonso considers his opening claim carefully. For each opening claim, describe the worst that can happen to Alonso if the pirates play by the rules, even if their sole pleasure in life is to make sure Alonso gets as little as possible! Assume that after his first move, Alonso plays perfectly.

If Alonso claims 100%, then the smallest that Alonso might get is: _____.
This would happen, for instance, if:

If Alonso claims 70%, then the smallest that Alonso might get is: _____.
This would happen, for instance, if:

If Alonso claims 40%, then the smallest that Alonso might get is: _____.
This would happen, for instance, if:

If Alonso claims 10%, then the smallest that Alonso might get is: _____.
This would happen, for instance, if:

If Alonso claims 25%, then the smallest that Alonso might get is: _____.
This would happen, for instance, if:

How much should Alonso claim? _____%
Why?

Now we take a peek into the paranoid personality of Bonzo. Bonzo is certain that the entire world is out to get him, not by death, but coin by coin. The world is going to cheat him 5% here, and 10% there until he has to sell his wooden leg for firewood. Bonzo's suspicions are completely confirmed when Alonso arrogantly claims 55% of the loot as his first move.

For each first move by Bonzo, describe the worst that can happen to Bonzo if the pirates play by the rules, even if their sole pleasure in life is to make sure Bonzo gets as little as possible! Assume that after his first move, Bonzo plays perfectly.

If Bonzo passes on the claim, then the smallest that Bonzo might get is: _____.
This would happen, for instance, if:

If Bonzo claims the 55% as is, then the smallest that Bonzo might get is: _____.
This would happen, for instance, if:

If Bonzo reduces the claim to 40%, then the smallest that Bonzo might get is: _____.
This would happen, for instance, if:

If Bonzo reduces the claim to 5%, then the smallest that Bonzo might get is: _____.
This would happen, for instance, if:

If Bonzo reduces the claim to 25%, then the smallest that Bonzo might get is: _____.
This would happen, for instance, if:

Should Bonzo pass, claim as is, or reduce it to: _____%
Why?

Condo is also certain everyone is out to cheat him. However, even his cynical mind is confused when Bonzo claims only 10%.

For each first move by Condo, describe the worst that can happen to Condo if the pirates play by the rules, even if their sole pleasure in life is to make sure Condo gets as little as possible! Assume that after his first move, Condo plays perfectly.

If Condo passes on the claim, then the smallest that Condo might get is: _____.
This would happen, for instance, if:

If Condo claims the 10% as is, then the smallest that Condo might get is: _____.
This would happen, for instance, if:

If Condo reduces the claim to 5%, then the smallest that Condo might get is: _____.
This would happen, for instance, if:

Should Condo pass, claim as is, or reduce it to: _____%
Why?

Donko is also certain everyone is out to cheat him, but he is reasonably sure it is he who will do the cheating. However, even his greedy mind is confused when Condo passes after Bonzo claims 70%.

For each first move by Donko, describe the worst that can happen to Donko if the pirates play by the rules, even if their sole pleasure in life is to make sure Donko gets as little as possible! Assume that after his first move, Donko plays perfectly.

If Donko passes on the claim, then the smallest that Donko might get is: _____.
This would happen, for instance, if:

If Donko claims the 70% as is, then the smallest that Donko might get is: _____.
This would happen, for instance, if:

If Donko reduces the claim to 5%, then the smallest that Donko might get is: _____.
This would happen, for instance, if:

If Donko reduces the claim to 25%, then the smallest that Donko might get is: _____.
This would happen, for instance, if:

Should Donko pass, claim as is, or reduce it to: _____ %
Why?