

Puzzle of the Week

Pirates with Gold – 1

There are three pirates on an island, and they have a total of 12 gold coins.

The rules are:

1. The pirates are very smart.
2. Each pirate wants as much of the gold as possible for themselves, and does not care about the others.
3. The youngest pirate must propose a plan for splitting up the gold. If the plan is acceptable to over half of all the pirates (including the youngest), then the plan is adopted. Otherwise, the youngest pirate is forced to leave the island with no gold, and the new youngest pirate must propose a plan.

THE CHALLENGE: What is the most gold coins the youngest pirate can get in an acceptable plan?



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Pirates with Gold – 1 – Notes

THE CHALLENGE: This puzzle is a wonderful example of using two related problem-solving techniques - learning from examples and learning from simpler versions of the problem.

Let's work our way up to three pirates.

1 Pirate: This is easy. The youngest pirate gets all 12 gold coins.

2 Pirates: The youngest pirate gets nothing. If the youngest pirate tried to have any of the gold, the other pirate would vote against the plan, forcing the youngest to leave and thereby getting everything anyway.

3 Pirates: The youngest pirate need only convince one other pirate to vote for the plan. As we saw in the two-pirate case, the second-youngest pirate will get nothing if the initial plan is rejected. So, the youngest pirate's plan just needs to give the second-youngest pirate 1 gold coin to give the second-youngest pirate a reason to vote for the plan.

Giving away 1 gold coin means the youngest pirate gets to keep 11 gold coins!

In "Pirates with Gold - 2" we will see what happens when there even more pirates.