

Riddle: Test your Logic Skills

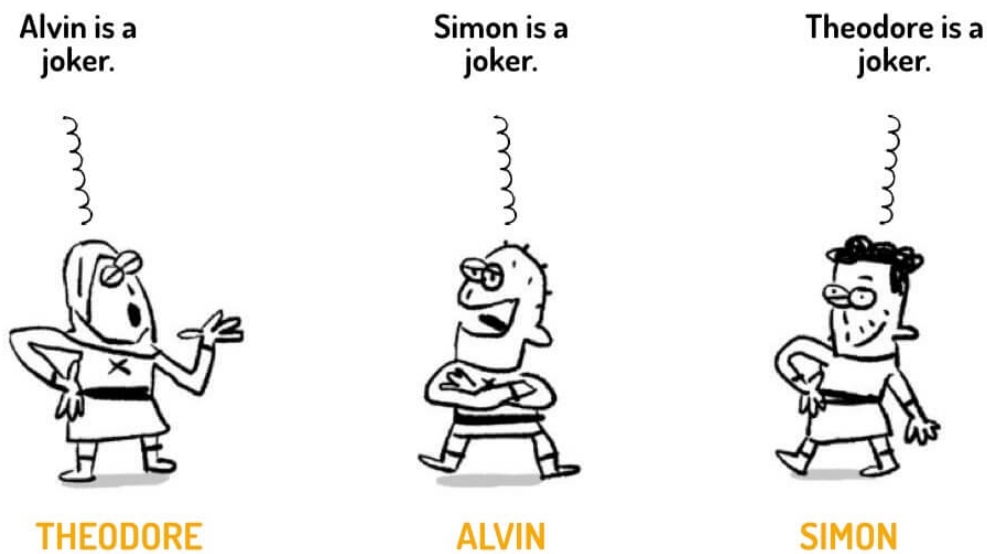
Suppose you are visiting an island with **knights** who always tell the truth, **knaves** who always lie, and **jokers** who can do either.

You meet three islanders named Theodore, Alvin and Simon. They all know what the others are (a knight, knave, or joker) and make the following statements:

If **exactly one of them is a joker**, how many of them are knights?

Choices:

1. One of them
2. Two of them
3. None of them



Correct Answer: **One of them is a knight.**

Since exactly one of them is a joker and they all accuse different people of being jokers, the joker is lying. If the joker were telling the truth, then they would claim that they themselves are the joker, which none of these three are doing.

Given each person is accused by another, one of them is correctly accusing the joker of being a joker and thus is telling the truth. For instance, suppose that Theodore is the Joker. Then Simon is telling the truth. Or you can suppose that Alvin is the joker, in which case Theodore is telling the truth.

This person telling the truth can't be a joker (since as already pointed out, the joker is lying), so the truth-teller must be a knight.

We've concluded that one person is a joker and at least one is a knight. The third person can't be a knight (they must be a knave), because the knight and the third person are saying that different people are jokers, which is impossible with only one joker. For instance, if Theodore is the joker, then Simon is telling the truth (and is a knight) and Alvin is lying (and is a

knave).

So, since there is only one truth-teller, there must be only one knight.

Note: "None of them are knights" is incorrect because one of them is a joker and all of them point to another person as the joker. One of them has to be telling the truth, and it's not the joker.

Source: (www.Brilliant.org)