

## The truth machines puzzle

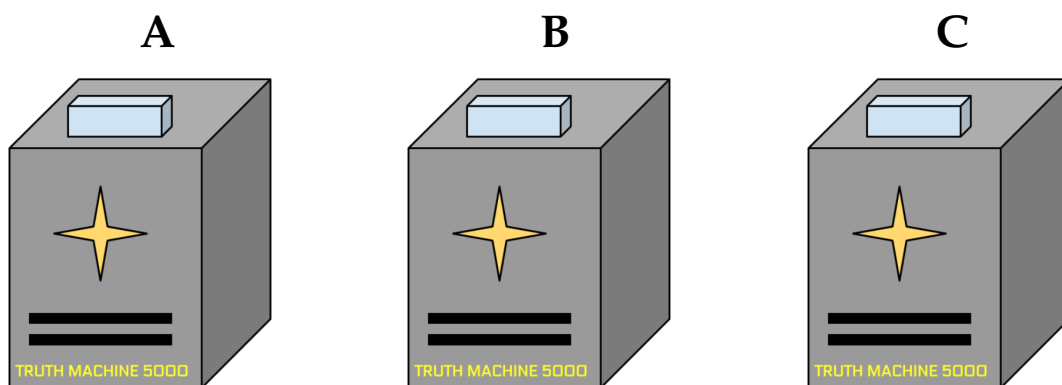
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A company has invented *truth machines*, which are such that for any statement that is input, they will indicate the truth-value of the statement with a flashing light, either green or red. The truth machines are manufactured in both the UK and Australia, but look identical since they are built according to the same plans—except that the machines built in the UK indicate “true” with a green light and “false” with a red light, while the machines built in Australia do it the other way round.

Here are three machines *A*, *B*, and *C*. We know that one was built in the UK and one was built in Australia. We aren’t sure where the third one was built, but we know for sure that it is broken: it will randomly flash a red or green light when a statement is input.



The problem is that we’ve lost track of which ones are which. Your task is to determine which machine was built in the UK, which was built in Australia, and which one is broken. (And, of course, you should try to do so in the most elegant and efficient way.)