

Alice Tests Bobs Memory, but Bob Cheats

Alice Recites all but ONE number: Alice is going to recite all but one of the numbers in $\{1, \dots, n\}$ to Bob, in some arbitrary order. Bob will listen to all these numbers and then tell which one is missing. This would seem to take LOTS of memory on Bob's part. Help Bob! Give him a way that doesn't take that much memory.

Alice Recites all but TWO number: Alice is going to recite all but two of the numbers in $\{1, \dots, n\}$ to Bob, in some arbitrary order. Bob will listen to all these numbers and then tell which two are missing. This would seem to take LOTS of memory on Bob's part. Help Bob! Give him a way that doesn't take that much memory.

Alice Recites all but 17 number: Alice is going to recite all but seventeen of the numbers in $\{1, \dots, n\}$ to Bob, in some arbitrary order. Bob will listen to all these numbers and then tell which seventeen are missing. This would seem to take LOTS of memory on Bob's part. Help Bob! Give him a way that doesn't take that much memory.