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Operating Systems

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Game Algorithm

In order to always “win” the only thing the player should be concerned with is whether or not to go first. This can be decided by using the variable X which represents the turn such that none of the subsets of available numbers add up to X. The objective for the player would be to for their turn to end on round X. So if X is odd the player using the algorithm should play first otherwise they would let the opponent play first.

To determine the value for X the player using the algorithm should use Sieve. The way Sieve works is the player takes account of all the numbers from 0 to the sum of all the numbers on the table, and crosses off zero, one at a time, without replacement. When each number is taken off every number that is the same is taken off plus the previously crossed off number. When this is done for every number on the table, the smallest un-crossed off number is X