It is possible to make a convex polygon with given side lengths if and only if a generalized triangle inequality holds: the length of the longest side is less than the sum of lengths of other sides. It is impossible to make a convex polygon from a given set, so there is a side which is longest than (or equals to) than sum of others. Assume it is greater by k; then it is sufficient to add a rod of length $k + 1$. More, it is clear that adding any shorter length wouldn't satisfy the inequality. Thus the answer for the problem is
$$\max(l_1, \ldots, l_n) - (l_1 + \cdots + l_n - \max(l_1, \ldots, l_n)) + 1.$$