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*Olson's Conjecture*

In 1961, Erdős, Ginzberg, and Ziv proved that, for every sequence  $g_1, \dots, g_{2n-1}$  of elements of a finite solvable group  $G$  of order  $n$ , there exist indices  $i_1, \dots, i_n$  such that (writing the operation additively)  $g_{i_1} + \dots + g_{i_n} = 0$ . In 1976, Olson eliminated the solvability condition, thereby extending the result to *all* finite groups, before conjecturing:

For any sequence of  $g_1, \dots, g_{2n-1}$  of elements of a finite group  $G$ , then there exist indices  $i_1 < \dots < i_n$  such that  $g_{i_1} + \dots + g_{i_n} = 0$ .

Save some special cases, this problem remains open.