Sum of Two Integers

Suppose $S$ is a set of distinct, positive integers less than or equal to $n$. Also suppose that there are at least $n/2 + 1$ elements in the set $S$. ($S$ is a subset of $\{1, 2, 3, \ldots, n\}$ and $|S| > n/2 + 1$.) Show that there must be at least three elements, $a_i, a_j, a_k$, in $S$, which satisfy $a_i + a_j = a_k$. 