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2.

According to the question requirements, y_i and E are both positive integers. The integer E is a positive constant. Therefore, the $E = y_i - c_i$. In order to keep all the c_i are positive, $y_i >= y_{min} - E >= 1$, which means if the smallest y among [1, n] larger than E, the other y must satisfy the condition. We also know that $S = \sum_{i=1} x_i/c_i$. ,By using $y_i - E$ replacing c_i, $S = \sum_{i=1} x_i/(y_i - E)$. Therefore in order to find all the correct x_i/c_i, we should only traverse all i which is O(n), and in the loop, we should check if $S = \sum_{i=1} x_i/(y_i - E)$, because the result is monotonous, the time complexity to find S is $O(\log y_{min})$, therefore, the total time complexity is $O(n)*O(\log y_{min})$.