Question 2.

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from the description we know 1 <= ymin <=n ,ci >= 1 and yi = ci +E

so the range of E is 1 <= E <= ymin, if we made all the possible E to a set,

Its length will be ymin, then we used binary search to find the correct E,

first choose the middle number in E set as Number **X**

**calculate the sum of xi/(yi-X) from i = 1 to i = n as S’**

**check if S = S’** then find the value of E and also find the correct value of yi

else if S > S’, which means the number before X are all not correct so use the other half to do another binary search, same applies for S < S’.

**Its complexity is, do binary search for a set with length = ymin and calculate the sum of n numbers = O(log ymin \* n) = O(n log min{yi: 1<=i<=n})**