Solution:

This proof rests on the intuition that the last word w_n belongs to a single line in the optimal solution, and this line begins at some earlier word w_i.

Therefore if we knew the last line of words $w_i ... w_n$ then we could remove this line from consideration and recursively solve the problem on the remaining words.

If OPT(i) is the optimal solution for words $w_1, ..., w_i$ and we let $s_{i,j}$ denote the minimum square of the slack of the the line that begins with w_i and ends with w_j Then our optimal solution is $OPT(n)$ = min$(s_{i,n} + OPT(n-1), 1 \leq i \leq n$.

Using a memoized version of this algorithm:

```
Create an array M[0...n]
Set M[0] = 0
For all pairs of words,
      Compute the least slack squared for each pair of words
Use the recurrence relation to solve for OPT(i) and store this at M[i]
Lookup M[n].
```