Let X_j (for $j = 1, \ldots, n$) denote the maximum possible return the investors can make if they sell the stock on day j. Note that $X_1 = 0$. Now, in the optimal way of selling the stock on day j, the investors were either holding it on day $j-1$ or there weren't. If they weren't, then $X_j = 0$. If they were, then $X_j = X_{j-1} + (p(j) - p(j-1))$. Thus, we have

$$X_j = \max(0, X_{j-1} + (p(j) - p(j-1))).$$

Finally, the answer is the maximum, over $j = 1, \ldots, n$, of X_j.

[1] ex244.420.389