Homework 3.

(Problem 6E.3, modified). Let $w_k,\ k = 1,...,M$, be independent random variables, all with mean values μ and variances $E(w_k - \mu)^2 = \lambda_k$. Consider

$$w = \sum_{k=1}^{M} a_k w_k$$

Determine $a_k,\ k = 1,...,M$ so that
(a) $Ew = \mu$.
(b) $E(w - \mu)^2$ is minimized.
(c) What is a statistical implication of this result?