

EXPLICIT SOLUTIONS OF MOMENT PROBLEMS, I

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Abstract: The moment problems minimizing (maximizing) $\{E\|X_1 - X_2\|^p : E\|X_i\|^{q_j} = a_{ij}; i = 1, 2, j = 1, \dots, n\}$, where X_i takes values in a separable norm space, are investigated. Explicit solutions when $n = 1$ are given for all $p \geq 0$ and $q_j \geq 0$ ($0^0 := 0$). If $n = 2$, the minimization problem is solved for $1 \leq q_1 \leq p < q_2$ and the maximization problem for $0 < p \leq q_1, 1 \leq q_1 < q_2$ or $0 < q_1 < q_2 < p$. Possible generalizations and open problems are presented.

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