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We give computer implementations of the following operations involving elliptic curves: (1) Given an algebraic equation for an elliptic curve X , compute a reduced lattice Λ such that $X = C/\Lambda$. (2) The inverse of (1): Given a lattice for X , compute an algebraic equation. (3) Given two elliptic curves (presented either by equations or lattices), compute the Teichmuller distance between them. (Received October 03, 2000)