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Soon-Yi Kang* (sykang@kias.re.kr), ASARC, Department of Mathematics, KAIST, Daejeon, 305-701, South Korea. *Mock Jacobi forms and the ${}_1\psi_1$ summation formula.*

We show that some q -series such as universal mock theta functions are linear sums of theta quotient and mock Jacobi forms of weight $1/2$, which become holomorphic parts of real analytic modular forms when they are multiplied by suitable powers of q . And we prove that certain linear sums of q -series that arise from Ramanujan's ${}_1\psi_1$ summation formula are weakly holomorphic modular forms of weight $1/2$ due to annihilation of mock Jacobi forms or completion by mock Jacobi forms. As an application, we obtain a relation between the rank and crank of a partition. (Received September 11, 2008)