Mock and partial theta functions may be considered as duals of one another. For instance, many $q$-hypergeometric series equal a mock theta function for $|q| < 1$ and may be written as a partial theta function for $|q| > 1$. Quantum modular forms attempt to bridge the gap and exist when $q$ is a root of unity. We will explain this phenomenon and give some connections to unimodal sequence and concave compositions. (Received September 25, 2012)