ABSTRACT. It is proved that if X and Y are linear spaces and $F : X \to P(Y)$ is a set-valued map with convex graph such that $F(x) \neq \phi$ for all $x \in X$ and $F(x_0)$ is a singleton for some x_0, then F is single-valued and affine. Applications to metric projections and to adjoints of set-valued maps are given.