$$\mathcal{C}^{m}$$

$$\mathcal{C}^{n}$$

$$\dim(\mathcal{R}(A)) = \dim(\mathcal{R}(A^{H}))$$

$$\mathcal{R}(A^{H}) = \operatorname{span}(Q_{2})$$

$$\oplus$$

$$\mathcal{R}(A) = \operatorname{span}(Q_{1})$$