

## 1 | Axler6.45 orthogonal complement, $U^\perp$

if  $U$  is a subset of  $V$ , then the orthogonal complement of  $U$ , denoted  $U^\perp$ , is the set of all vectors in  $V$  that are orthogonal to every vector in  $U$ :

$$U^\perp = \{v \in V : \langle v, u \rangle = 0 \forall u \in U\}$$