

Proof:

Let P_n be the proposition:

Show that P_1 is true.

Assume that P_k is true for some particular $k \in \mathbb{Z}^+$. That is,

Show that P_{k+1} is true.

Thus, $P_k \Rightarrow P_{k+1}$, and by mathematical induction, P_n is true $\forall n \in \mathbb{Z}^+$.