$$f : W \times Z \longrightarrow \mathbb{R}$$

Claim We have

$$\sup_{z \in Z} \inf_{w \in W} f(w,z) \leq \inf_{w \in W} \sup_{z \in Z} f(w,z)$$

Proof For $w_0 \in W$ and $z_0 \in Z$

$$\inf_{w \in W} f(w,z_0) \leq f(w_0,z_0) \leq \sup_{z \in Z} f(w_0,z)$$