

Problems - 3.2

(2) Find $\inf S$ and $\sup S$, and state whether or not these are contained in S .

$$S = \{x : x^2 - 3 < 0\}$$

(4) Find $\inf S$ and $\sup S$, and state whether or not these are contained in S .

$$S = \{x : x = \frac{y}{y+1}, \quad y \geq 0\}$$

(10) Suppose $B_1 = \sup S_1$, $B_2 = \sup S_2$ and $S_1 \subset S_2$. Show that $B_1 \leq B_2$.

(11) Suppose the S_1, S_2, S_3 are sets in \mathbb{R} and $S = S_1 \cup S_2 \cup S_3$. Show that $\inf S = \min(\inf S_1, \inf S_2, \inf S_3)$.