

Definition 3.145. [07D] Given $x, z \in X$ the following standard intervals are defined

$$(x, z) = \{y \in X : x < y < z\}$$

$$(x, z] = \{y \in X : x < y \leq z\}$$

$$(x, \infty) = \{y \in X : x < y\}$$

$$[x, z) = \{y \in X : x \leq y < z\}$$

$$[x, z] = \{y \in X : x \leq y \leq z\}$$

$$[x, \infty) = \{y \in X : x \leq y\}$$

$$(-\infty, z) = \{y \in X : y < z\}$$

$$(-\infty, z] = \{y \in X : y \leq z\}$$

$$(-\infty, \infty) = X .$$