Let $X = \{a, b, c, d\}$ with topology $\tau = \{\emptyset, X, \{a, b\}, \{a, b, d\}, \{b\}, \{b, d\}, \{b, c, d\}\}$.

(a) Is $\{b\}$ closed?

(b) Is X Hausdorff?

(c) Is X connected?