Homework #3 - Hand in no later than 2:41 p.m., Wednesday, May 24

Suppose X is the set of real numbers. Let $\mathbf{T} = \{[-a,a]: a > 0\} \quad \{X\} \quad \{\ \}$ and let $\mathbf{S} = \{(-a,a): a > 0\} \quad \{X\} \quad \{\ \}$.
Prove or disprove:

1. $\mathbf{T}$ is a topology for X.

2. $\mathbf{S}$ is a topology for X.

3. $\mathbf{T}$ is a base for a topology for X.

4. $\mathbf{S}$ is a base for a topology for X.