Property	Preserved by... products?	subspaces?	finer topologies?	open subspaces?	closed subspaces?
T_0	yes	yes	yes	yes	yes
T_1	yes	yes	yes	yes	yes
T_2	yes	yes	yes	yes	yes
T_3	yes	yes	no: $\mathbb{R} \to \mathbb{R}_K$	yes	yes
$T_{3.5}$	yes	yes	no: $\mathbb{R} \to \mathbb{R}_K$	yes	yes
T_4	no: $S_\Omega \times \overline{S_\Omega}$	no: $S_\Omega \times \overline{S_\Omega} \subset \overline{S_\Omega}^2$	no: $\mathbb{R} \to \mathbb{R}_K$	no: $S_\Omega \times \overline{S_\Omega} \subset \overline{S_\Omega}^2$	yes
T_5	no: $S_\Omega \times \overline{S_\Omega}$	yes	no: $\mathbb{R} \to \mathbb{R}_K$	**yes**	yes
T_6	no*	yes	no: $\mathbb{R} \to \mathbb{R}_K$	**yes**	yes

* T_6 is preserved by <u>countable</u> products ($\prod_{n \in \mathbb{N}} X_n$).

- $T_6 \iff$ [every closed set is of the form $f^{-1}(\{0\})$ for some cts. $f: X \to \mathbb{R}$] $+ T_2$
- Every metrizable space is T_6. (See HW17.)