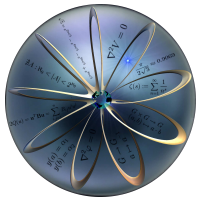

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Hausdorff property is hereditary

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Theorem 1. *A subspace of a Hausdorff space is Hausdorff.*

Proof. Let X be a Hausdorff space , and let Y be a subspace of X. Let $y_1, y_2 \in Y$ where $y_1 \neq y_2$. Since X is Hausdorff, there are disjoint neighborhoods U_1 of y_1 and U_2 of $y_2 \in X$. Then $U_1 \cap Y$ is a neighborhood of y_1 in Y and $U_2 \cap Y$ is a neighborhood of y_2 in Y, and $U_1 \cap Y$ and $U_2 \cap Y$ are disjoint. Therefore, Y is Hausdorff. □