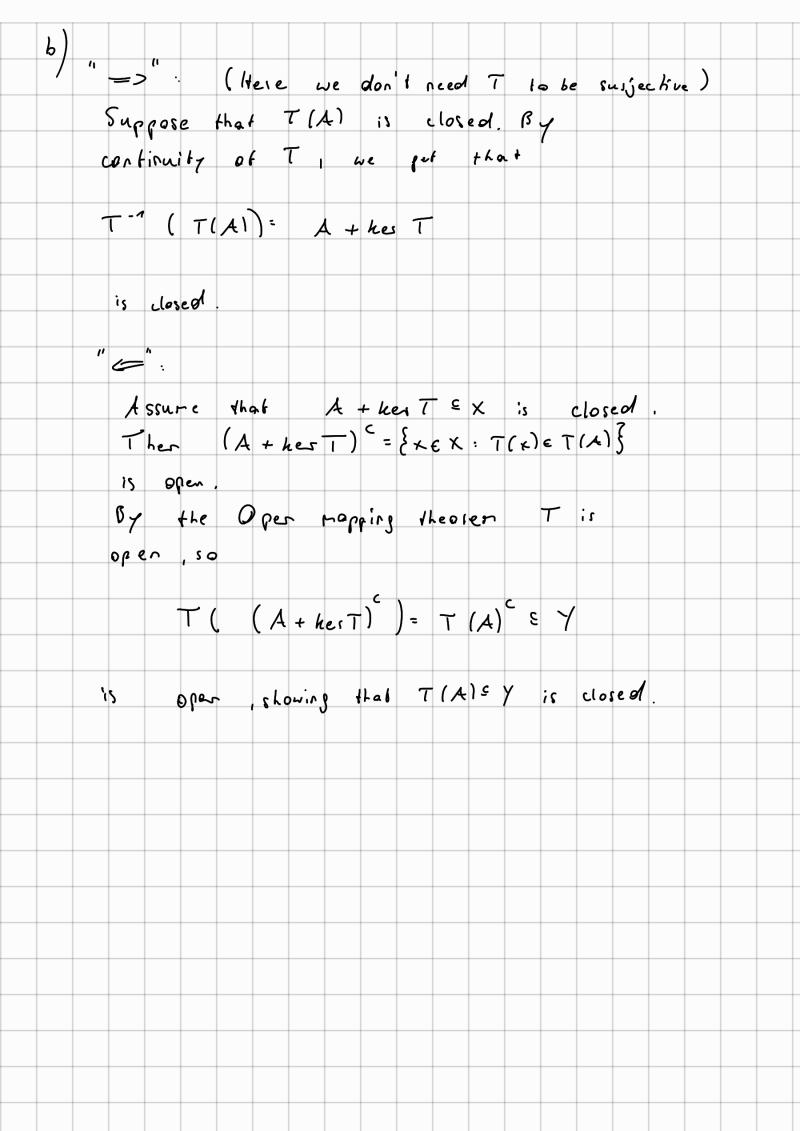
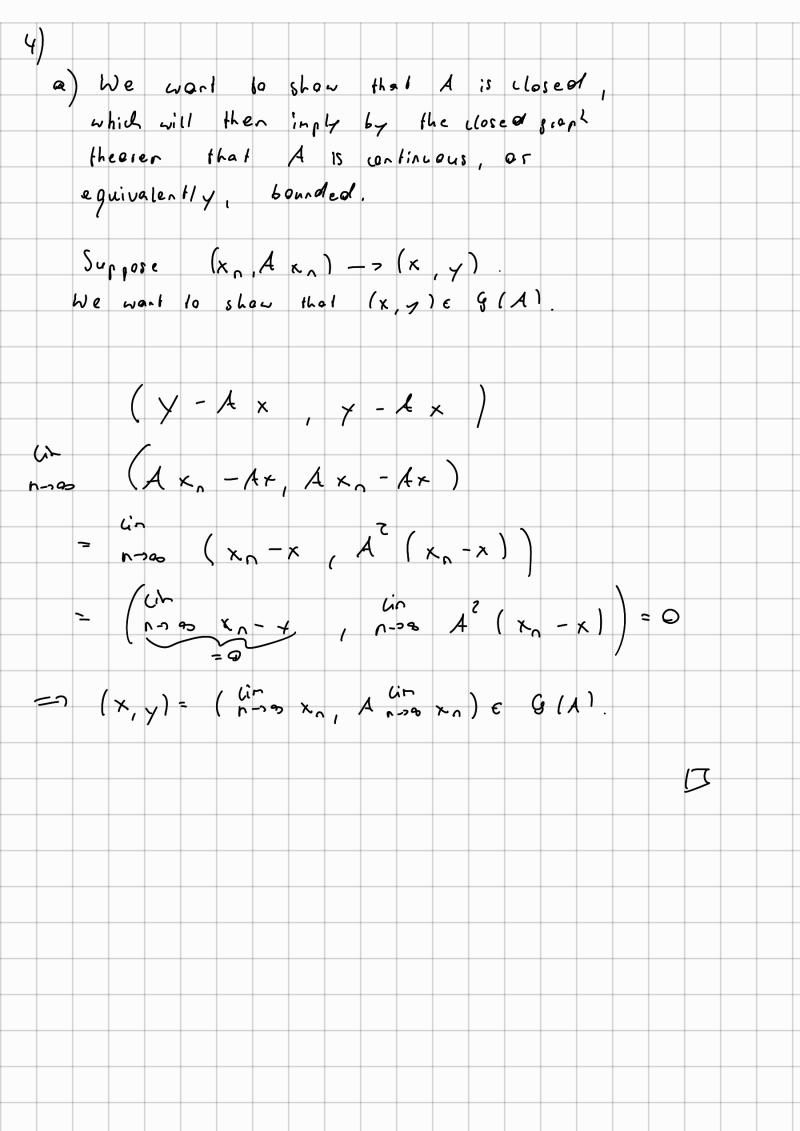
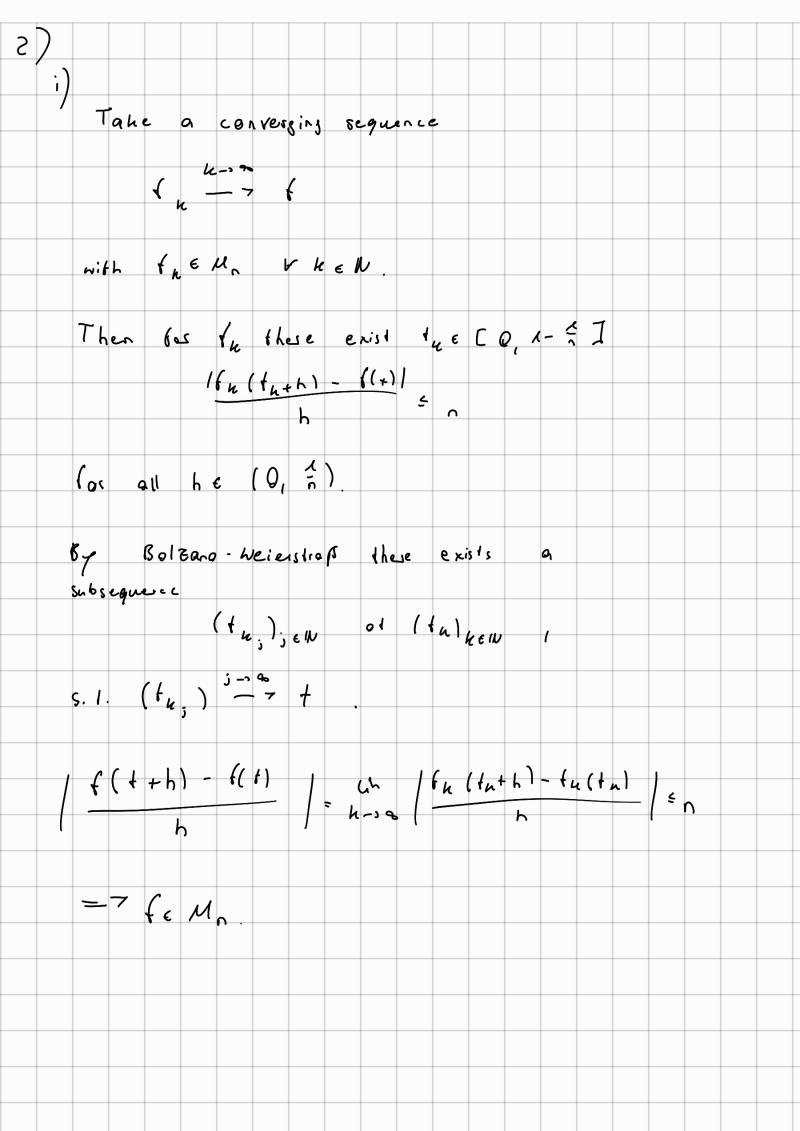
Max Gieples, Frie Redolph a) By the Baire category theorem (X 5) is a Baire topological space. Assume that there exists a countable Hamel bosis (an) new and define X = Span (a1, an). One can check that Xn is closed Cas all AEM, because it is a proper subspace of X We also clain that proper subspaces of normed spaces have empty interior. Proof of claim: Suppose X, has nonerpty. Then there exist xe Xn open, i.e. some F 70 with B ( k) & X Dow take any ze Xn and define A = X + SlISII . S & B'(x) & X" This implies that z = T (y - x) E X as Xn is a subspace. This is a contradiction to the propeners of Xn. 11 clain Z Hence X + U X as X is a Baile lopolgical space.

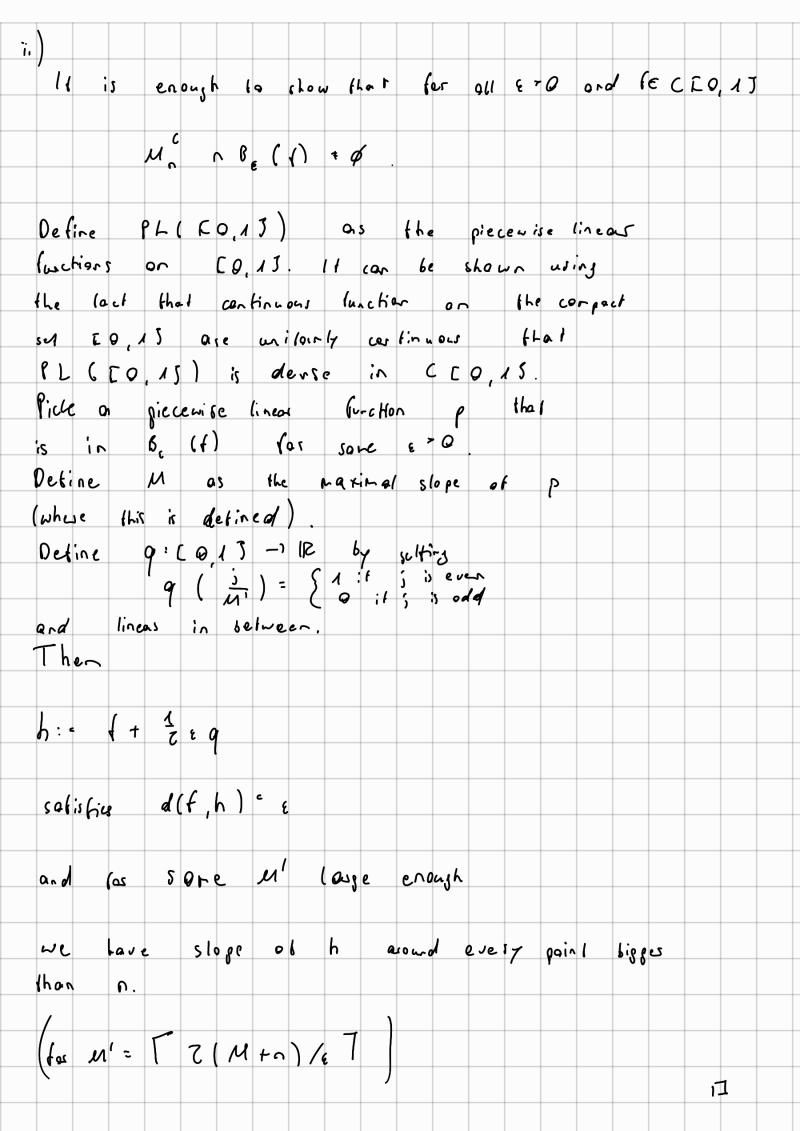












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