MATB24. Quiz 2, TUT # 0021

(1) [3] Give a complete definition, or mathematical characterization of the word in bold. Let V be an F-vector space.

    (a) A **linearly dependent subset** of V

(2) [6] True or false? Justify by a short proof or a counter example.

    (a) If V is the subspace of $\mathcal{F}$ spanned by $\{1, 2\sin^2(x), 3\cos^2(x)\}$, then $\dim(V) = 3$

(3) [6] Carefully prove the given statement.

    (a) Prove that $\mathrm{Span}(v_1, v_2) = \mathrm{Span}(v_1 + v_2, v_1 - v_2)$.