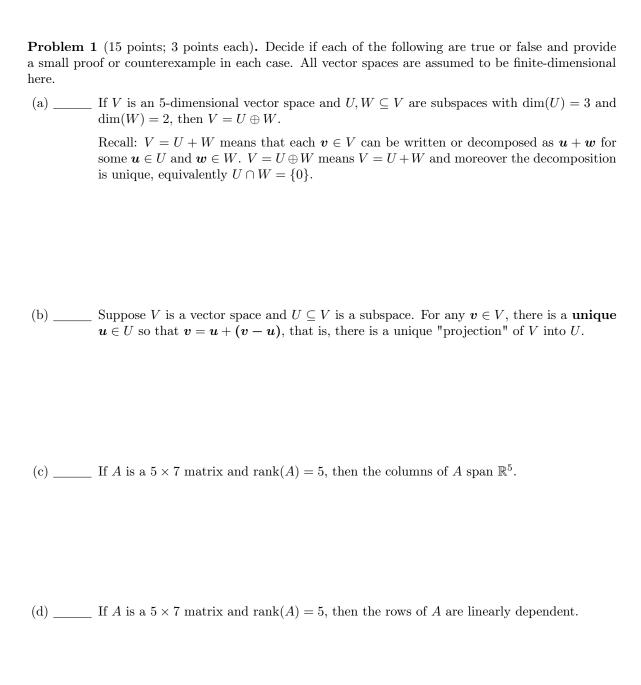
Quiz 3



Problem 2 (10 pts). Show that the collection, UT_3 , of upper triangular 3×3 matrices is a subspace of $\mathbb{R}^{3\times 3}$ (the space of all 3×3 matrices). Give a basis for UT_3 .

Problem 3 (10 pts). Either verify that $(0, \infty) = \mathbb{R}^+$ is a vector space (over \mathbb{R}) with vector addition $a + b = e^{(a+b)} = e^a e^b$ and $c \cdot a = (e^a)^c = e^{(ca)}$ for $c \in \mathbb{R}$ or else verify that this is not a vector space.