

Dokuz Eylül University, Department of Mathematics

MATH 223 LINEAR ALGEBRA

Quiz 1

01.10.2004

Name

Student No.

Sign

You will not get any points if your answer is wrong, that is no points to your explanations if your answer is wrong. And of course no points to a correct answer if your explanation or proof is not correct or clear.

YOU must write GOOD Mathematics

1. Given the linear transformation $T : \mathbb{R}^2 \rightarrow \mathbb{R}^2$ by $T(x, y) = (x - y, x + y)$

- (a) Find a spanning set for the null space.
- (b) Find a spanning set for the range.
- (c) Find $[T]_e$ if e is the standard basis for \mathbb{R}^2 .
- (d) Find $[T]_f$ if $f = \{(1, 1), (1, 0)\}$ is a basis \mathbb{R}^2 .

Answer: