

Worksheet 4

Due: Tuesday, March 24

Do these individually. Do not use **any** outside sources: no notes, books, or devices. Write your proof out rigorously, with all required quantifiers and justifications. Use the back for scratch work; do not include scratch work in the proof.

In \mathbb{R}^4 , let $U = \{(x, y, z, w) : x + z = 0 \text{ and } x - 2w = 0\}$. Show that $((2, 0, -2, 1), (0, 1, 0, 0))$ forms a basis for U .