

## LINEAR ALGEBRA HOMEWORK

AUGUST 1, 2023

**Exercise 1.** Let  $A, B$  be two matrices. **Prove** that  $(AB)^t = B^t A^t$ .

**Exercise 2.** For  $(x_1, \dots, x_n)^t \in F^n$ , let

$$V(x_1, \dots, x_n) = \prod_{1 \leq i < j \leq n} (x_i - x_j).$$

**Prove** that  $V(x_1, \dots, x_n)$  changes sign whenever  $x_i, x_j$  are switched for  $i \neq j$ .