

Aleksas Muroostas 260718389

Question 4.

a) show $d(a,b) = d(b,a)$

let $d(a,b)$ have 1 to n steps with delete, set, and insert statements.

We can show $d(a,b) = d(b,a)$ by reversing the direction of operations and changing some operations

- for each $\text{delete}(i)$ replace it with an $\text{insert}(i, c)$ with c representing the deleted string.
- for each $\text{insert}(x, i, c)$ replace it with $\text{delete}(x, i)$
- for each $\text{set}(x, i, c)$ replace it with $\text{set}(x, i, d)$

where d the character that c originally replaced.

Once all operations are adjusted, run the operations from n to 1 on b . therefore $d(a,b) = d(b,a)$

b) Explain how d can be computed in poly time