Question 1. Algorithmic Thinking [10 MARKS]

In this question we represent DNA sequences as strings that contain characters `'A'`, `'C'`, `'T'`, and `'G'`.

Part (a) [3 MARKS]

Complete the implementation of the following **helper function**:

```
def num_diffs(dna1: str, dna2: str) -> int:
    """Return the number of pairs of corresponding elements of DNA sequences
    dna1 and dna2 that differ.

    Precondition: dna1 and dna2 have the same length.

    >>> num_diffs('A', 'C')
    1
    >>> num_diffs('ACTGTGC', 'ACTGTGC')
    0
    >>> num_diffs('ACTGTGC', 'ACCGTGG')
```