CS444: Operating Systems

Homework 1

Due: 2/13/2025

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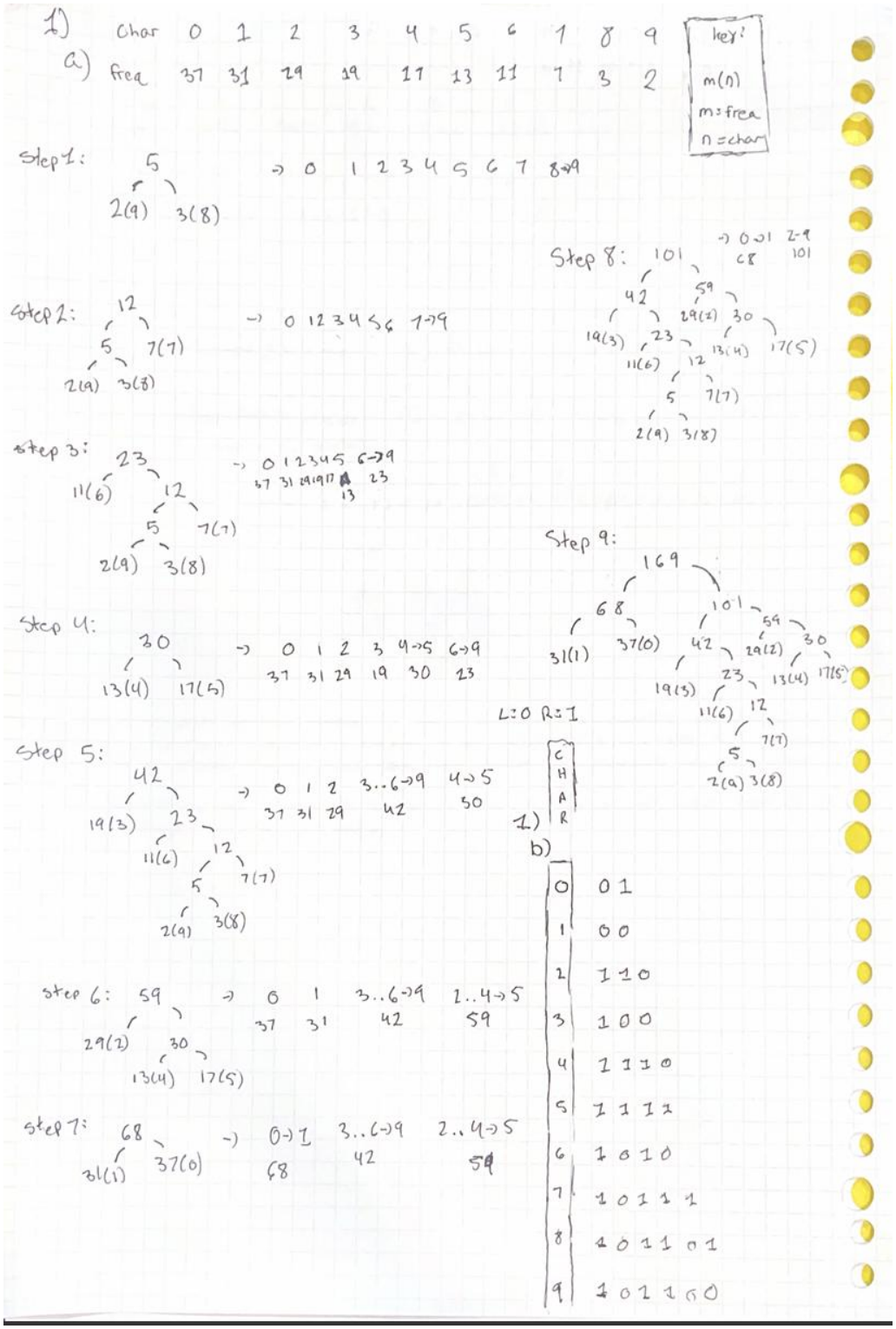
1. Huffman Coding:

Figure 1: HW1 Question 1a & 1b



2. Chapter 1 metric prefixes and ASCII codes for project1:

a) There are 1,000,000,000 nanoseconds in 1 second. → $1\ nanosecond = 1 * 10^{-9} s$
b) 1 gigabit = 1,000,000,000 bits per second → $1\ gb = 1 * 10^{9} bits$
c) 1 kilobyte = 1024 bytes, 8bits wide $\frac{1024}{8} = 128 bytes\ tall$

``A':
- Dec: 65
- Bin: 01000001
- Hex: 41

'9':
- Dec: 57
- Bin: 00111001
- Hex: 39

'?':
- Dec: 63
- Bin: 00111111
- Hex: 3F

3.

Figure 3: hw1 Question 3a-3b Answers