

Review 9-2

1. Construct an optimal prefix code (Huffman code) for the following table.

	a	b	c	d	e	f
Frequency (in thousands)	45	13	12	16	9	5

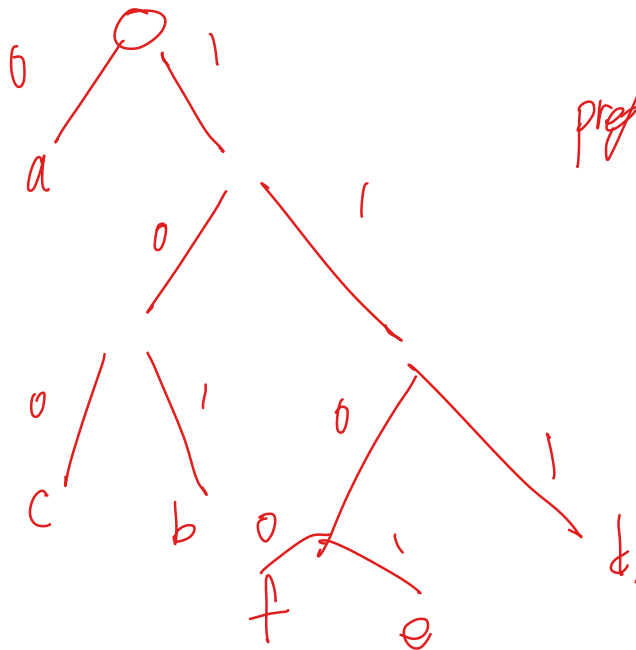
Fixed
Huffman Variable

000 001 010 011 100 101
0 101 100 111 1101 1100

Σ
100.

$$\Sigma_{\text{fixed}} = 100 \times 3 \quad \text{kb} = 300 \text{ kb}$$

$$\begin{aligned} \Sigma_{\text{var}} &= 45 + 13 \cdot 3 + 12 \cdot 3 + 16 \cdot 3 + 4 \cdot 9 + 5 \cdot 4 \quad \text{kb} \\ &= 45 + 175 + 48 + 36 + 20 = 224 \text{ kb} \end{aligned}$$



prefix coding