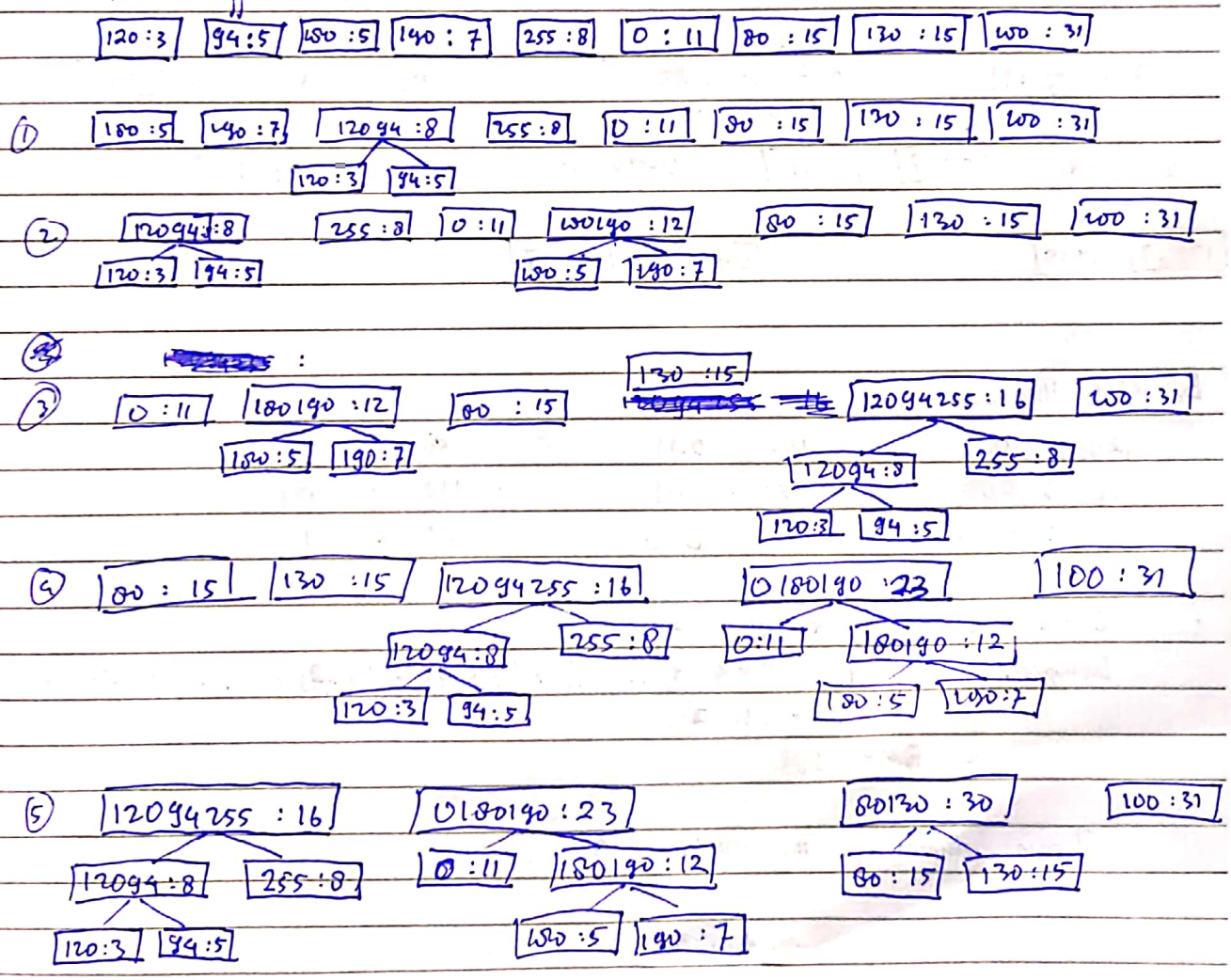
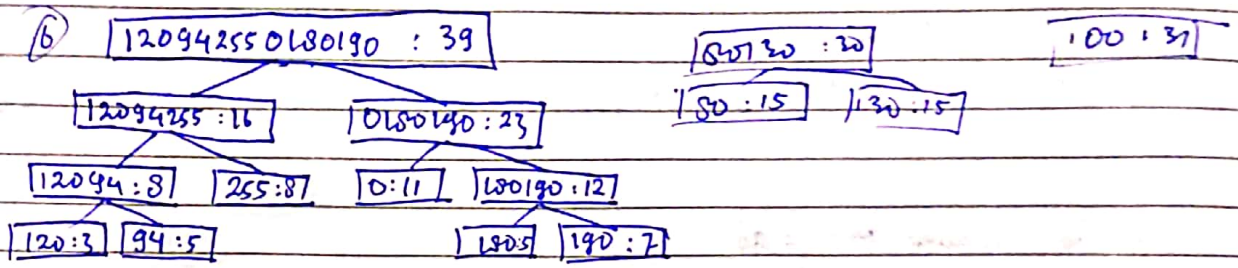
2. 2 digit terakhir NIM : 94

120 = 3
94 = 5
180 = 5
190 = 7
255 = 8
0 = 11
80 = 15
130 = 15
100 = 31

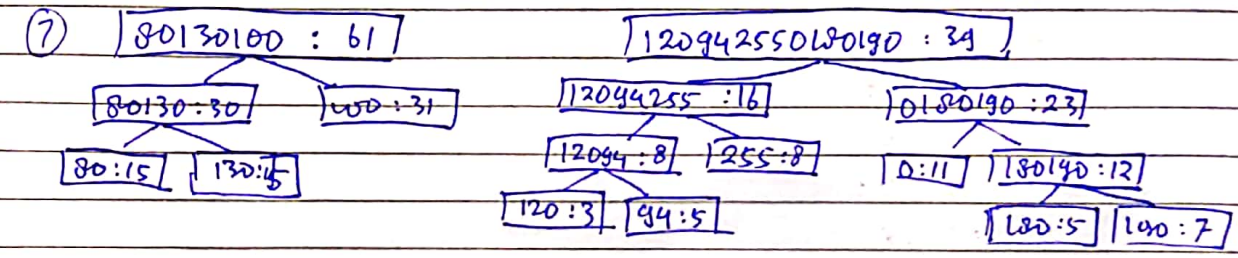
a) Pohon huffman



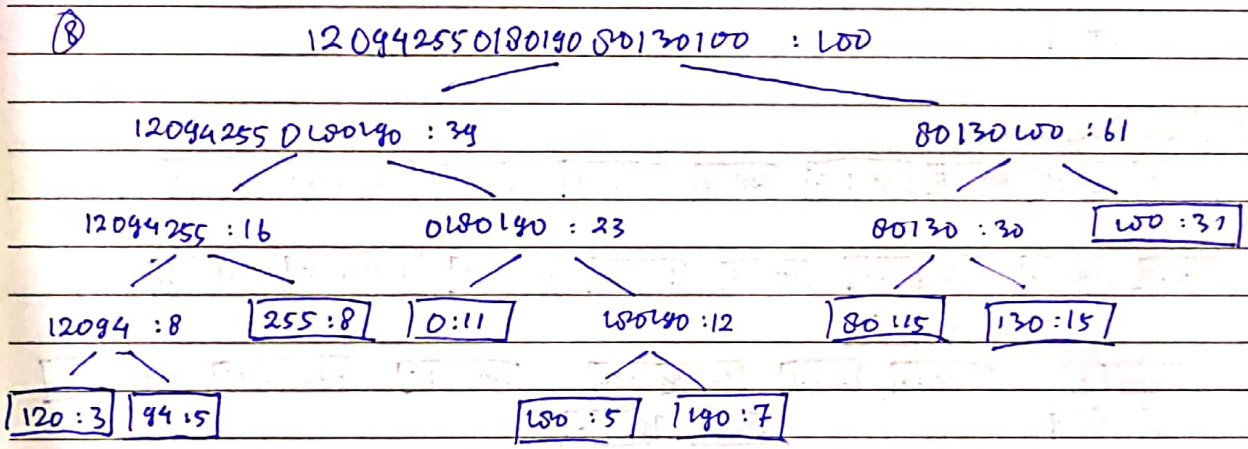
⑥



⑦



⑧



b. Kode Huffman

120	: 0000	190	: 0111	80	: 100
94	: 0001	255	: 001	130	: 101
180	: 0110	0	: 010	100	: 11

c. Citra asli = 8 × 100 = 800 bit

Kompresi : (3×4) + (5×4) + (5×4) + (7×4) + (8×3) + (11×3) + (15×3) + (15×3) + (31×3)

= 289

Rasio kompresinya = 100 % − $\frac{289}{800}$ × 100 %

= 63,87 %

(KKY)

d) (80, 3) (100, 7)
(190, 3) (255, 7)
(255, 1) (130, 4) (100, 3) (0, 2)
(100, 1) (130, 4) (0, 5)
(0, 2) (120, 3), (100, 5)
(94, 5) (80, 5)
(100, 5) (80, 3) (0, 2)
(190, 4) (100, 2) (130, 4)
(130, 3) (100, 7)
(100, 6) (80, 4)

Jumlah pasangan : 26

ukuran citra asli : $8 \times 100 = 800$ bit

setelah kompresi : $(26 \times 8) + (26 \times 4)$
$= 312$

Rasio : $100\% - \frac{312}{800} \cdot 100\% = 61\%$

KKY

3. $x_1 = 94$

$x_2 = 130$

a. $\frac{y - y_1}{y_2 - y_1} = \frac{x - x_1}{x_2 - x_1}$

pers. garis 1 (0,0) - (94,0)

$\Rightarrow \frac{y - 0}{0 - 0} = \frac{x - 0}{94 - 0}$

$y = 0$

pers. garis 2 (94,0) - (130, 255)

$\Rightarrow \frac{y - 0}{255 - 0} = \frac{x - 94}{130 - 94}$

$36y = 255(x - 94)$

$36y = 255x - 23970$

$255x - 36y = 23970$

pers. garis 3 (130, 255) - (255, 255)

$\Rightarrow \frac{y - 255}{255 - 255} = \frac{x - 130}{255 - 130}$

$y - 255 = 0$

$y = 255$

b. Output jika input pixel citra 170

→ $170 > x_2$ → PG 3

$x = 170$, $y = ?$

→ $y = 255$

KIKY