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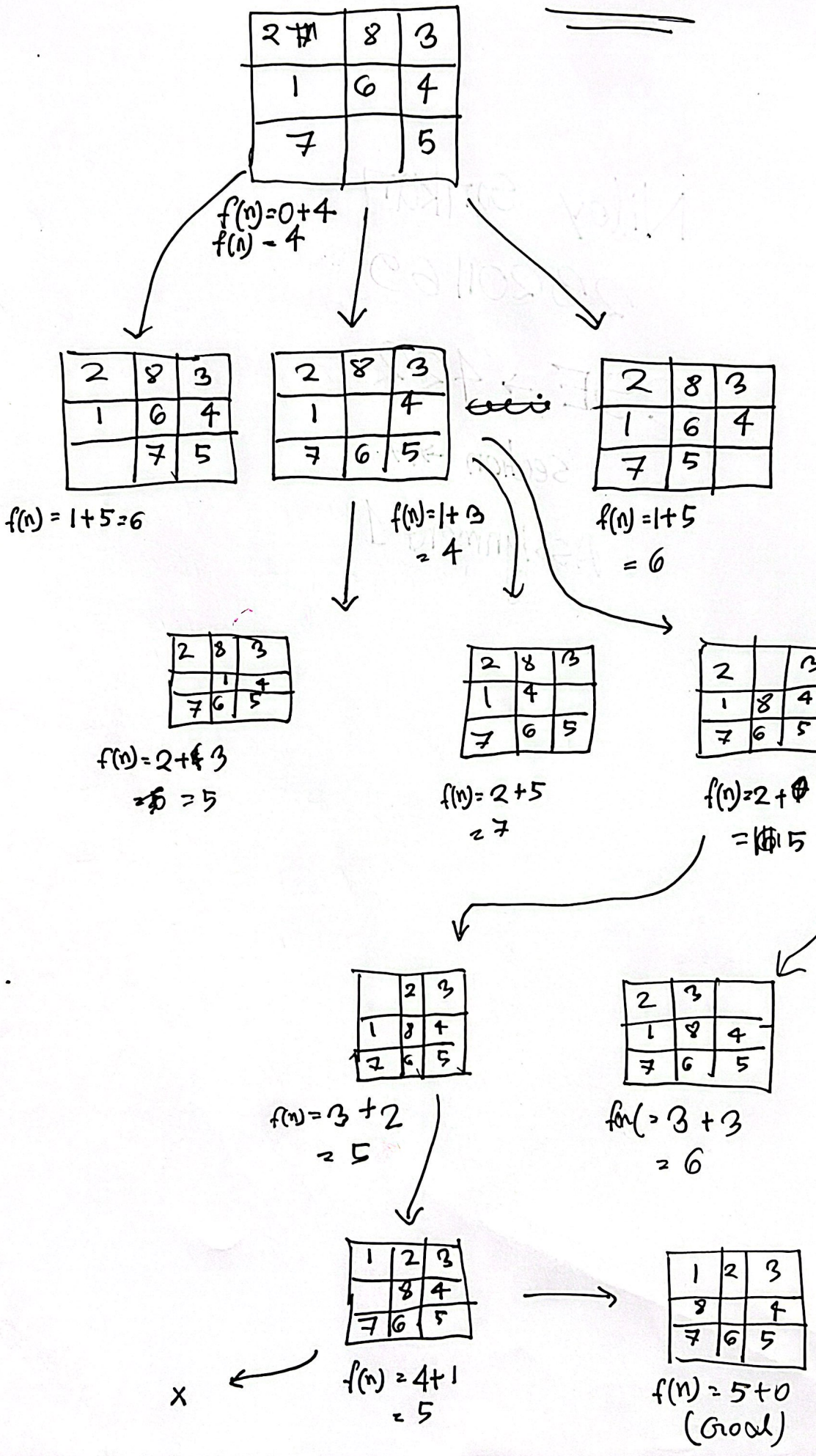
CSE → 422

section → 17

Assignment 1

Ans of 1


f(n)=0+4
f(n)=4
f(n)=1+5=6
f(n)=1+3
=4
f(n)=1+5
=6
f(n)=2+3
=5
f(n)=2+5
=7
f(n)=2+3
=5
f(n)=3+2
=5
f(n)=3+3
=6
f(n)=4+1
=5
f(n)=5+0
(Goal)
X

Answer to the ques 2

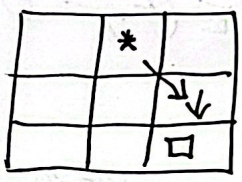
a) Let start Node (N-1, N-2)

$$h_2(n) = |(N - N+1)| + |(N - N+2)|$$

$$= 3$$

But Actual cost,

Assume N = 3



$$\sqrt{2} + 1$$

$$= 2.414$$

which is lower than $h_2(n)$

hence Not Admissible.

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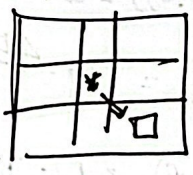
b) Let start Node (N-1, N-1)

N=3



True Cost $= \sqrt{2}$

$$h_1(n) \times 1.2 = 1.2 \times \sqrt{(N-N+1)^2 + (N-N+1)^2}$$

$$= 1.2 \times \sqrt{2}$$

$\therefore$ True cost $< h_1(n)$

hence proved, $1.2 h_1$ is not admissible.

Answer to the Q3

E(θ) $|\theta \sin(\theta)\cos(\theta^2)$

$\theta_0 = 0.7$

(i) $E(\theta_0) = 0.3978$

(ii) $E(\theta_{-1}) = 0.31706$ $\theta_{-1} = 0.6$

$E(\theta_1) = 0.4603$ (Best) $\theta_1 = 0.8$

(iii) $E(0.8) = 0.4603$

$E(0.9) = 0.486$ (Best)

$E(0.7) = 0.397$

(iii) $E(0.9) = 0.486$ (current best)

$E(1) = 0.454$

$E(0.8) = 0.4603$

As going higher didn't improve

Also $\theta = 0.9$ is higher than both Neighbours.

So Local Maxima $= E(0.9) = 0.486$ (Ans)