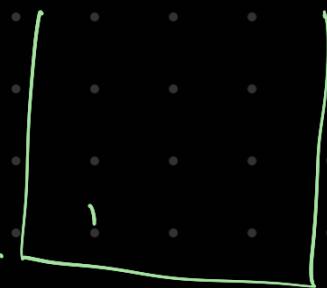
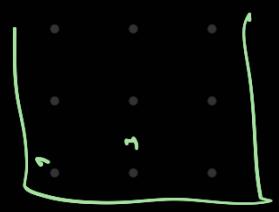


A I



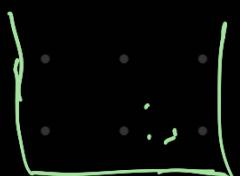
8l

A



5l

B



3l

C

3l

= 8 - 3

= 5

3l

0l

5 - 3

2l

3l

3l

5l

1l

7Q

0Q

7
3l
4l

1l

3l

ied

X (1f4) l

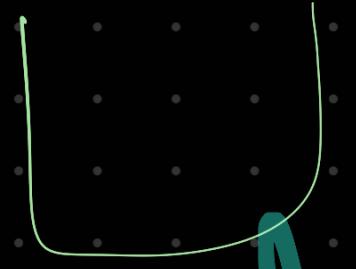
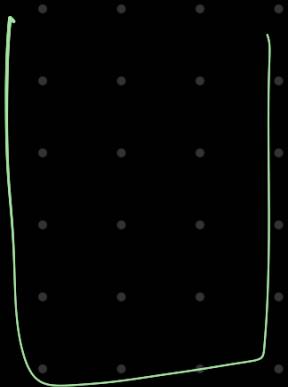
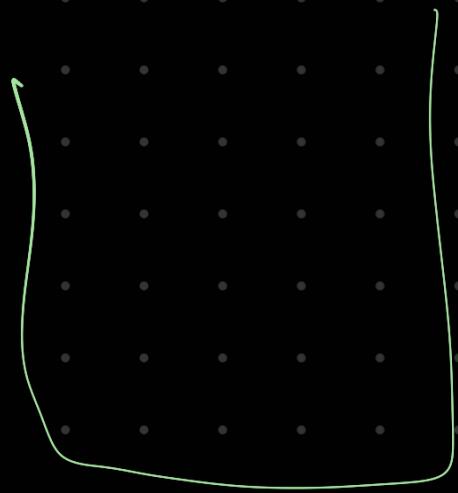
4l

0l

A

B

C



8

8

- 5

- 5

- 2

- 2

- 7



7

- 4

- 4

0

0

3

5

0

1

4

0

3

0

2

1

0

3

0

Sit
recovered

8
A

S
B

3
C

8

0

0
3
0
0

3

3
2

3

2
0

6

5
4
4

6

2
3
0

1

1

4

1		2
4	5	3
7	8	6

1	2	3
4	5	1
7	8	

1	2	
4	5	3
7	8	6

1	2	3
4	5	
7	8	6

1	2	3
4	5	6
7	8	

⑩

3		5
2	1	4
8	6	7

1	2	3
4	5	6
7	8	

D.A.D

We have two solutions;

- Different algorithms for same problem may take different amount of time.

Eg:- For searching problem,
there are two algorithms

Linear search &
Binary search. Binary
Search takes less time compare
to Linear Search.

- Some algorithms require different amount of time for different input.

Example :-

Best, average & worst case of an algorithm. Linear search if element is present at first position then it takes less time compare to if element is present at last position.

Analyzing an algorithm :-

To predict the resources that require by it

↓
Space & time

Asymptotic Notations:

It describe the running time of an algorithm when input size becomes large enough (So that only higher term are relevant)

Notation: $\Theta(n)$, $O(n)$, $\Omega(n)$, $\mathcal{O}(n)$, $\omega(n)$

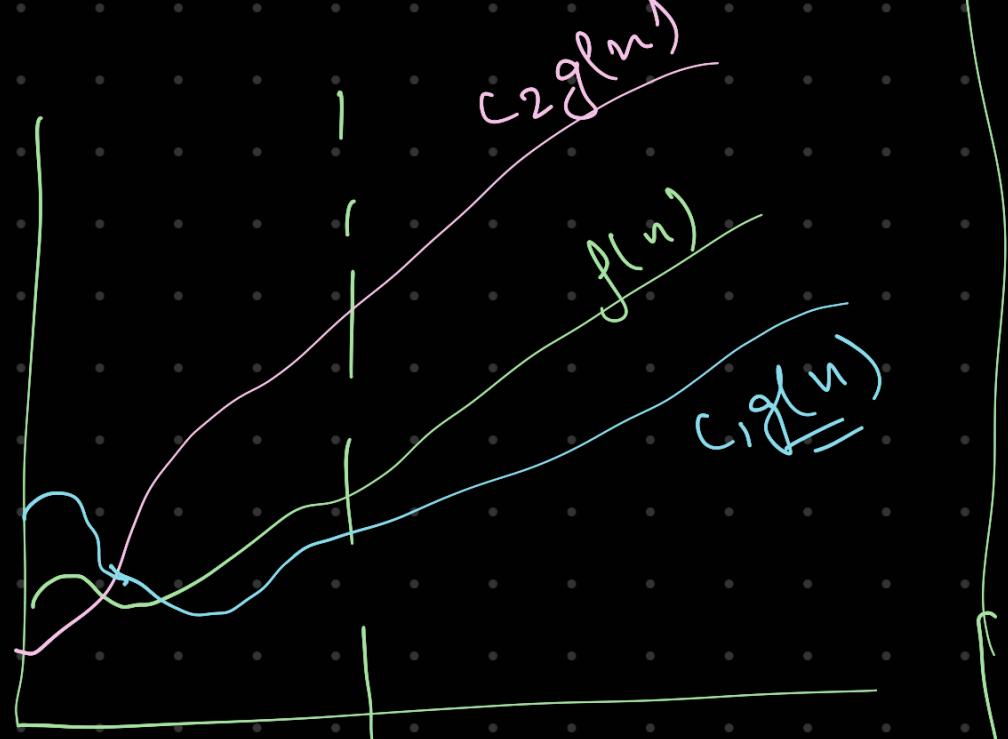
$\Theta(n)$:- Set of functions

we define $\Theta(g(n)) =$

$\{f(n) : \exists c_1, c_2 \text{ & } n_0 \text{ such that } c_1 g(n) \leq f(n) \leq c_2 g(n) \}$

$c_1, c_2 \text{ & } n_0$ Such that

$$c_1 g(n) \leq f(n) \leq c_2 g(n)$$



No

$$f(n) = \Theta(g(n))$$

If \exists positive constant $c_1, c_2 \text{ & } n_0$

in other word,

$$f(n) \in O(g(n))$$

MFAI

- $A \Rightarrow B$: $A \rightarrow B$ is tautology
- $A \Leftrightarrow B$: $A \rightarrow B$ is tautology ?
 $B \rightarrow A$ is a tautology.

$$(P \vee Q) \wedge (P \rightarrow R) \wedge (Q \rightarrow R) \Rightarrow R$$

$\rightarrow R$ is
a tautology

① Assume this is true.

② Then;

$(P \vee Q)$, $(P \rightarrow R)$, $(Q \rightarrow R)$ should
be true.

③ Now;

Check by putting True in
a variable.

in this case an try to solve
the equation

we should get the other value
in this case value of R

$$P \rightarrow (\neg Q \vee R) \Leftrightarrow (P \wedge Q) \rightarrow R$$

$$\vdash P(\rightarrow (\neg Q \vee R))$$

$$\Leftrightarrow P \vee (\neg Q \vee R) \quad \text{[Associative law]}$$

$$\Leftrightarrow (\neg P \vee \neg Q) \vee R$$

$$\Leftrightarrow \neg(P \wedge Q) \vee R$$

$\{\neg, \vee\}$ and its complementry

$\{\neg, \wedge\}$ can be used to
express all the

$$\neg, \vee, \wedge, \rightarrow, \Leftrightarrow$$

$$A \wedge B \Leftrightarrow \neg(\neg A \vee \neg B)$$

$$\rightarrow \neg \vee$$

$$P \rightarrow Q \Rightarrow \neg P \vee Q$$

$$P \Leftrightarrow Q \Rightarrow (\neg P \vee Q) \wedge (\neg Q \vee P)$$

21-2.14 — Read

in Book

Normal forms:-

? Topology

? Contradiction

types of normal forms;

DNF \rightarrow Disjunctive NF

CNF \rightarrow Conjunctive NF

Product of sum

$(P \wedge Q) \vee (Q \wedge R) \dots$

Sum of product

$(P \vee Q) \wedge (Q \vee R) \dots$

$$P \wedge (P \rightarrow Q)$$

$$P \wedge (\neg P \vee Q)$$

$$(P \wedge \neg P) \wedge (P \wedge Q)$$

Principal DNF :-

$$P \wedge Q$$

$$\neg P \wedge Q$$

$$\neg P \wedge \neg Q$$

$$P \wedge \neg Q$$

Expressed
as
all form
with help
of three
others;

$$? P \rightarrow Q \Leftrightarrow (P \wedge Q) \vee (\neg P \wedge Q) \vee (\neg P \wedge \neg Q)$$

We can get it by
using K-map

Human

Basic Guideline for Value Education;

- Universal
- Rational
- Natural & verifiable
- All in compassing
- Leading to harmony.

Universal;

whatever we study as a value education has to be universally applicable to all human being

and being true all time all place in addition it need not restrict itself creed, gender, nationality, etc., So it has to be deal with universal human values.

Rational;

If not to be eminable to reasoning or not based on dogma and blind belief

It cannot be only set at only
does / don't

Natural & verifiable;

Being natural means if it
acceptable in a natural manner
to all human beings.

When we live on the basis of
the such value that are
natural to us if leads to the
full filament leads to our
happiness and also it is
conducive to the other people
we interact with and as well
as with nature.

This also has to be done
by both checking for the
validity within ourselves
as being naturally acceptable
as well as something that we
implement in our living &
observe its outcome to be

fulfilling.

P Y T H O N

age = 25

_age = 25

age - 2 = 25

large = 35

