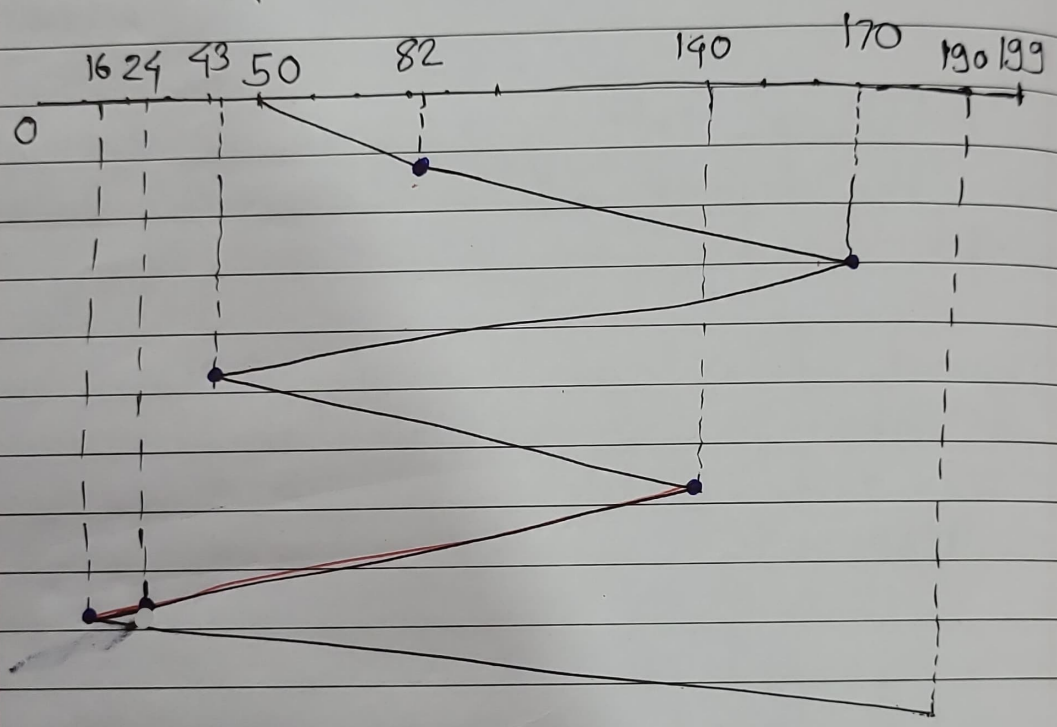
Disk Scheduling Algorithms

(FCFS) First come First serve Scheduling Algorithm

A disk contains 200 tracks (0-199)
Request queue contains track no.
82, 170, 43, 140, 24, 16, 190 respectively
current position of Read write head is
equal to 50. Calculate total no. of
tracks movements by Read write head using
FCFS Scheduling algorithm.



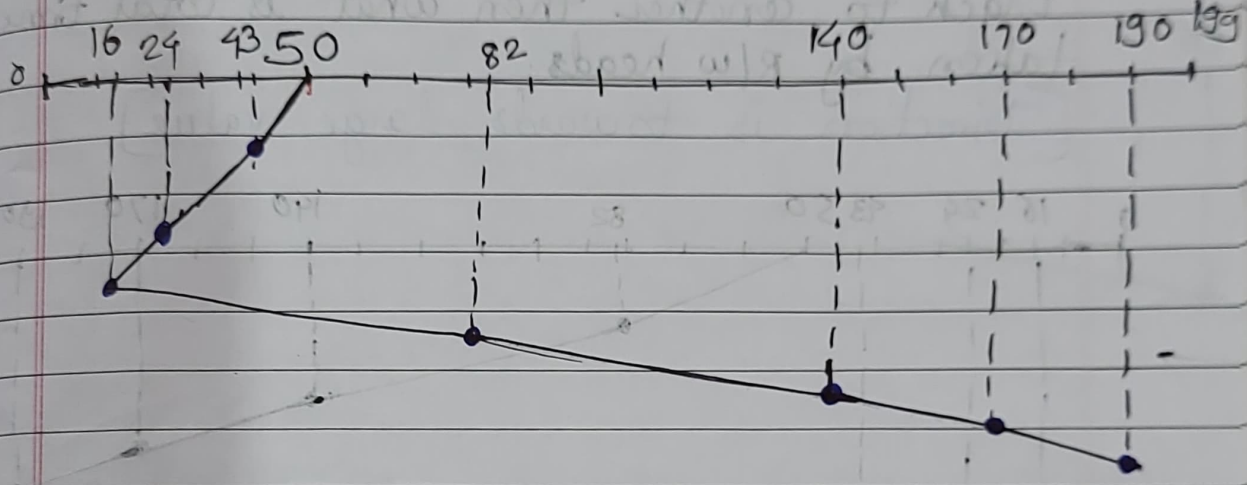
Total no. of tracks movement = (82-50) + (170-82)
+ (170-43) + (140-43) + (140-24) + (24-16) +
(190-16)

Also = (170-50) + (170-43) + (140-43) + (140-16) +
(190-16)

= 642

(SSTF) Shorted seek time first Scheduling :-

A disk contains 200 tracks (0-199). Request queue contains track no.
82, 170, 43, 140, 24, 16, 190 respectively.
current position of Read write head is equal to 50. Calculate total no of tracks movement by Read write head using shortest seek time first scheduling algorithm



If R/w heads takes 1ns to move from one track to another then total time what is taken by R/w heads:

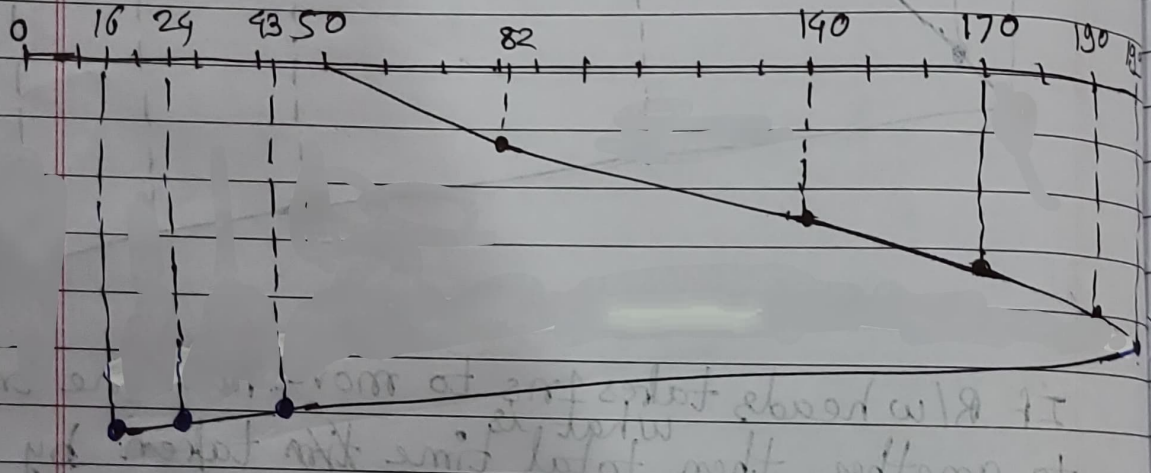
Total no. of tracks movement = (50-43) + (43-24) + (24-16) + (82-16) + (140-82) + (170-140) + (190-170)

Also equal to = (50-16) + (190-16) = 208

Total time taken by R/w head = 208 x 1ns
= 208 nsec

SCAN Disk Scheduling Algorithm

A disk contains 200 tracks (0 to 199)
Request queue containing track no.
82, 170, 43, 140, 24, 16, 190 respectively.
Current position of Read write head is equal to 50. Calculate total number of track movements by read write head using SCAN type of Disk Scheduling algorithm.
If R/w heads taken 1ms to move from one track to another then what is total time taken by R/w heads.
[Direction is towards large value]

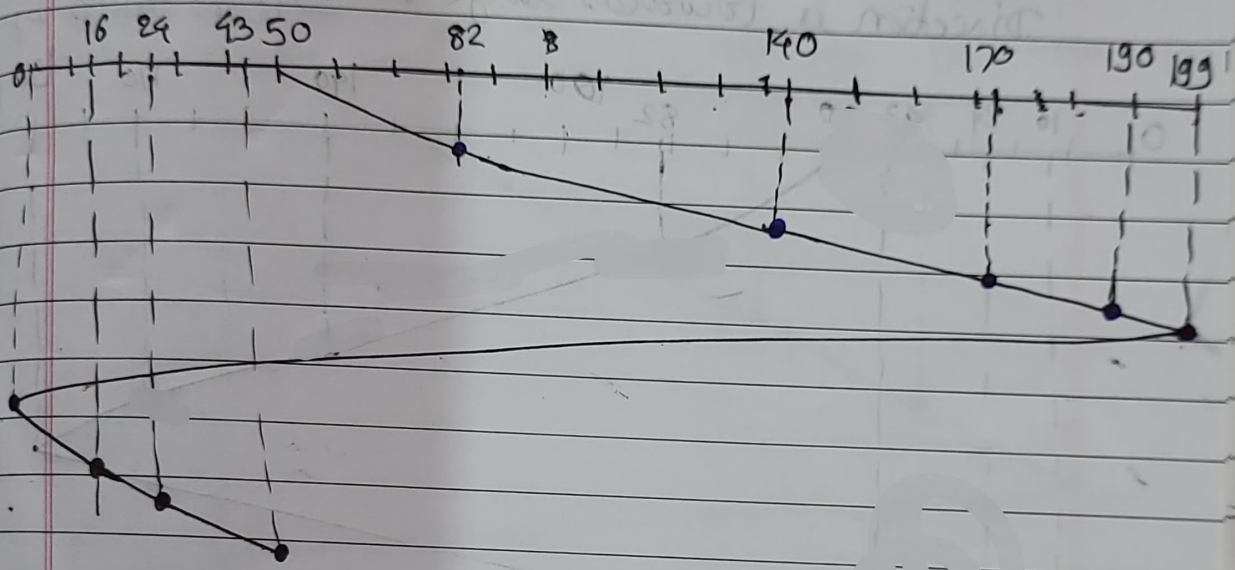


Total no. of track movements = (199-50) + (199-16)
= 332

Total time taken by R/w head for all track movement = 332 × 1ms sec
= 332 msec

C-SCAN Disk Scheduling Algorithm

A disk contains 200 tracks (0 to 199).
Request queue contains track no.
82, 170, 43, 140, 24, 16, 190 respectively.
Current position of Read write head is equal to 50. Calculate total number of track movements by read write head using C-SCAN disk scheduling Algorithm.
(Direction is towards large value.)



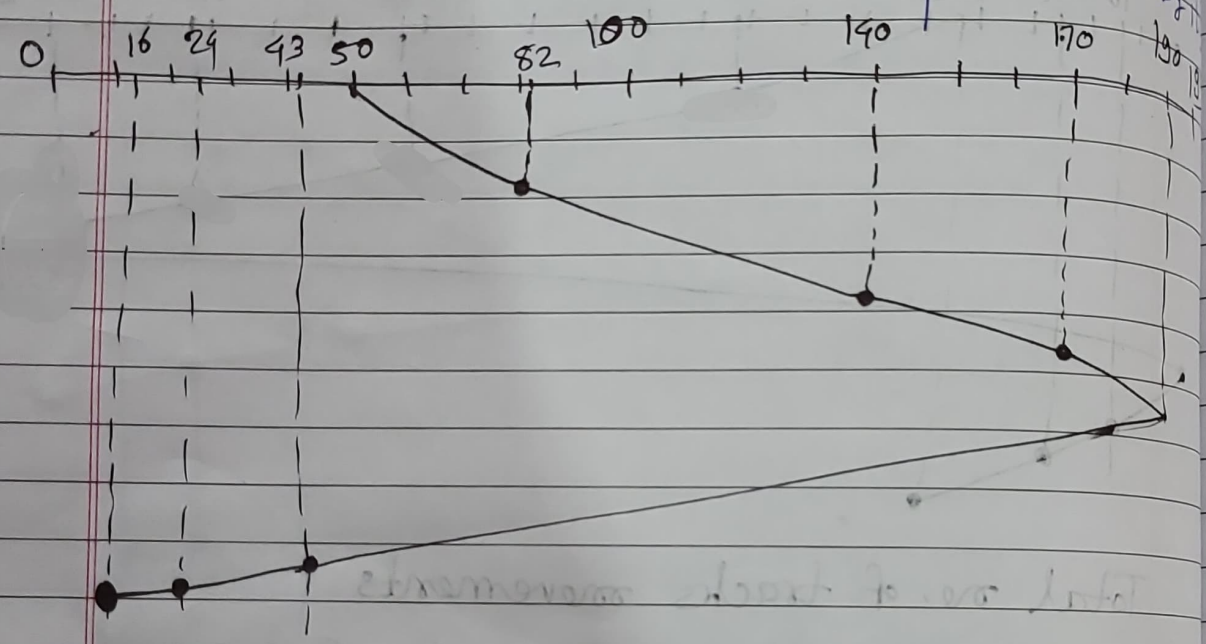
Total no. of tracks movements

$= (199-50) + (199-0) + (43-0)$

$= 391$

Look Disk Scheduling Algorithm

A disk contains 200 tracks (0 to 199).
Request queue contains track no.
82, 170, 43, 140, 24, 16, 190 respectively.
Current position of Read write head is equ
to 50. Calculate total number of track
movements by read write head using Loo
Type Disk scheduling Algorithm. If read write
taken 1ns to move from one track to another, then
[Direction is towards large value] what is the to
time taken by



Total No. of track movements.

$= (190-50) + (190-16)$

$= 314$

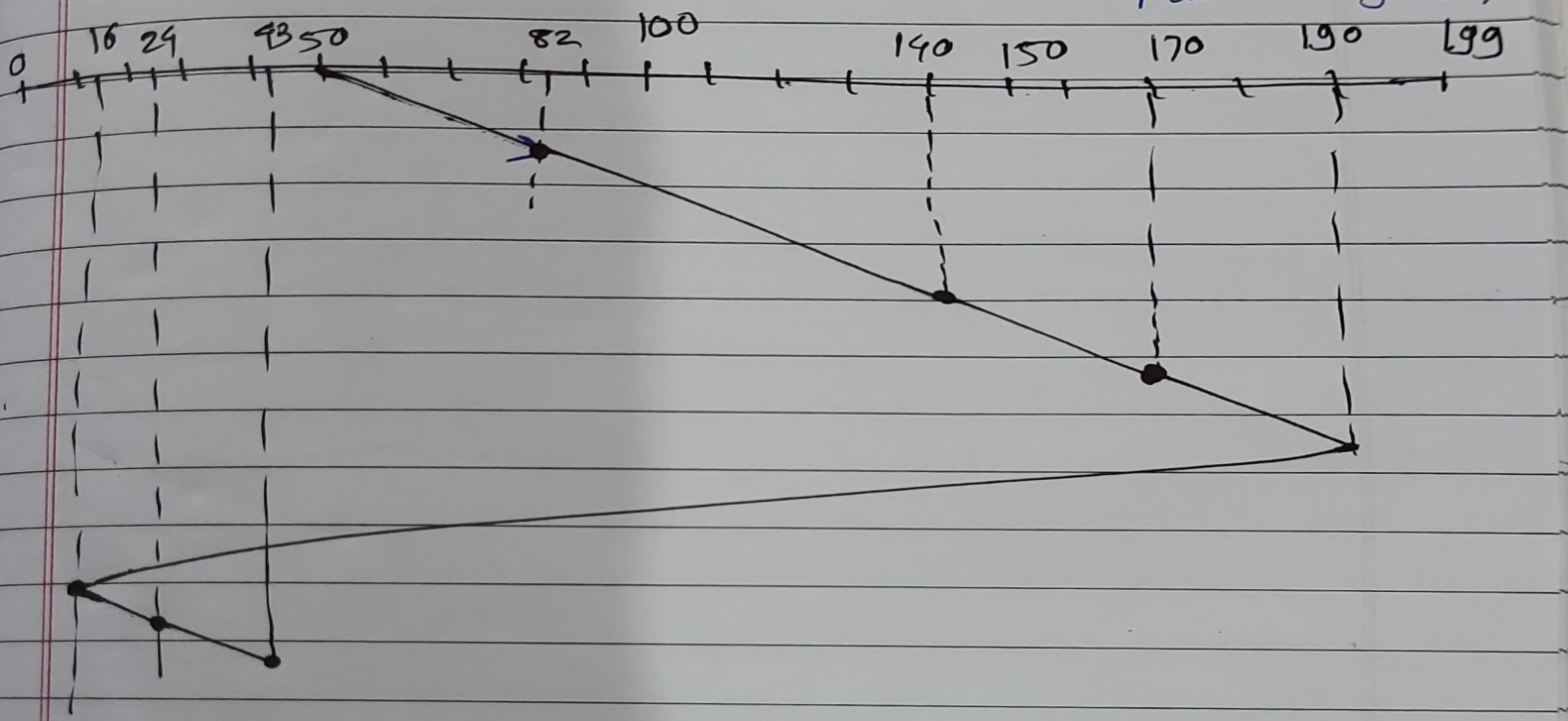
Total time taken by R/W head for all track movement $= 314 \times 1$ nsec

$= 314$ nsec

C-Look Disk Scheduling Algorithm

A disk contains 200 tracks (0 to 199).
Request queue contains track no.
82, 170, 43, 140, 24, 16, 190 respectively.
Current position of Read write head is equal to 50.
Calculate total number of track movements by read write head using C-Look Disk scheduling Algorithm. If read write head taken 1 ns to move from one track to another, then what is the time taken by it?

Direction is towards large value



Total No. of track movements

$= (190-50) + (190-16) + (43-16)$

$= 341$

Total time taken by R/w head for all track movement $= 341 \times 1$ nsec

$= 341$ nsec