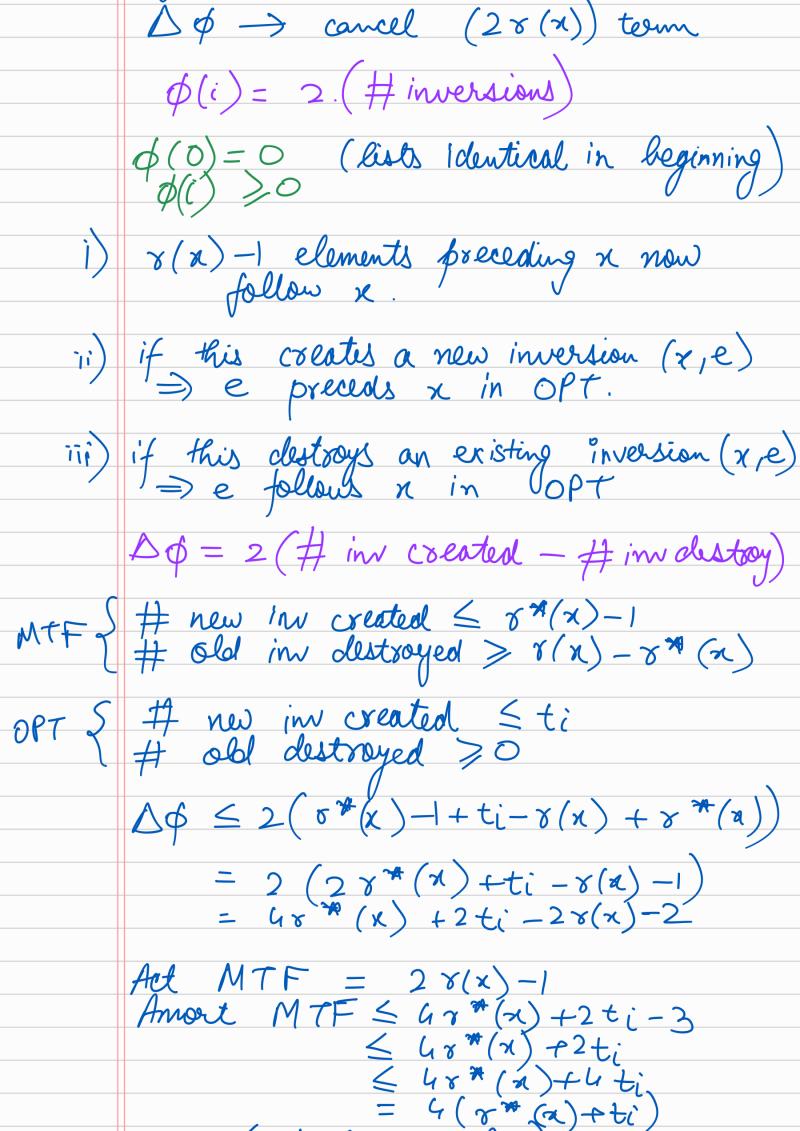
_	$C_{\bullet}$ $A + B = 0$
<u>ー</u> )	Competitive Ratio
	A = online algo
	A = online algo OPT = optimal offline algo
	TA (m) = time taken by A for m open "
	Topt (m) = " "OPT " Same seg
Time !	friciency of moder"
	TA (m) = time taken by A for m open n  Topt (m) = ""OPT" Same seg,  friciency  A is said to be X-competitive if there is a constant K St
	$T_A(m) \leq \alpha T_{OPT}(m) + k$
	for every sequence of len m, and
	for every sequence of len m, and
	Good Quality
•	
	QA(m) = size of matching comp. by A
	QA(m) = size of matching comp. by A for a seq of redges. QDPT (m) = size of matching comp by OPT for same seq.
	for same sog.
A is	X competitive if 3 K st
	$Q_A(m) > \propto Q_{OPT}(m) + K$
	for all seg of len m, for every m.
$\rightarrow$	Move to Front Algo

online eg of m search open n > min time algo. access only thru Head, and only adjele swaps allowed. Whenever we search any ele, bring it to the front of the list after search. r(e) = rank of ele e in list. Search (e) = starting from head ptx, scan linearly till we find e bring the mode storing e to the front of list ley a seg, of swaps. MTF V/S OP 1 We don't know about OPT. I Search (x) be ith query open n. MTF  $\Rightarrow$  rank (x) = r(x)OPT  $\Rightarrow$  rank  $(x) = r^*(x)$ Actual cost of Search (x) in MTF=2r(x)-1
in OPT= x\*(x)+ti no. of swaps by oft 20 We want to show amortised cost in MTF < amort cost in OPT >> bounded by \*\* (x) and ti



< 4 (act OPT) For ith query obern, amont cost of MTF \le 4 act cost of OPT TMTF (m) 

Amount cost of m open M7F

E 4 act cost of DPT

E 4 TOPT (m) => MTF is 4 competitive