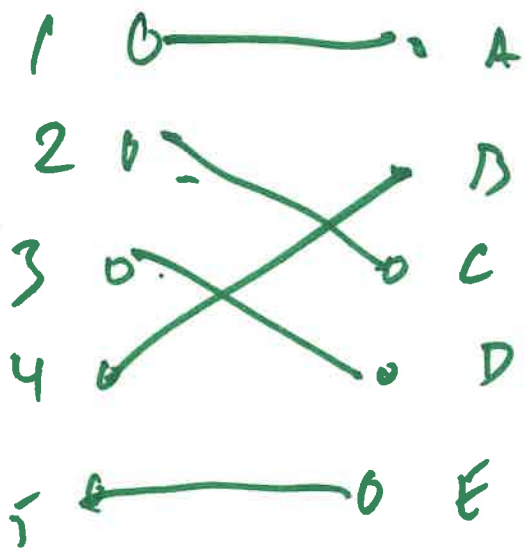
Set 5: Stable Matching

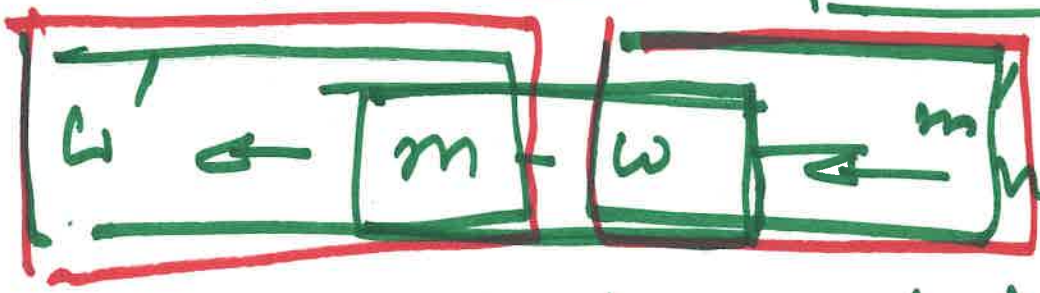


Perfect Matching

(Stable ?)

Unstable

one unstable pair



unstable.

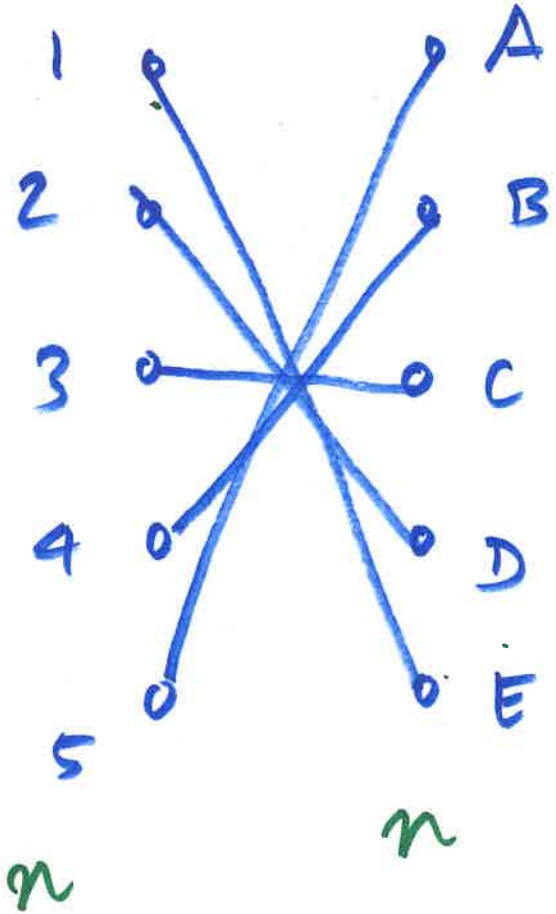
m has not been paired up with w

$m : \; w > w'$ ← X

$w : \; m > m'$ ← X

$w \to m'' > m$

$w \to m' > m''$



1 — A > B > C > D > E

2 . . . . .

3 . . . . .

4 . . . . .

5 . . . . .

A 5 7 4 7 3 7 2 7 1

B . . . . .

C . . . . .

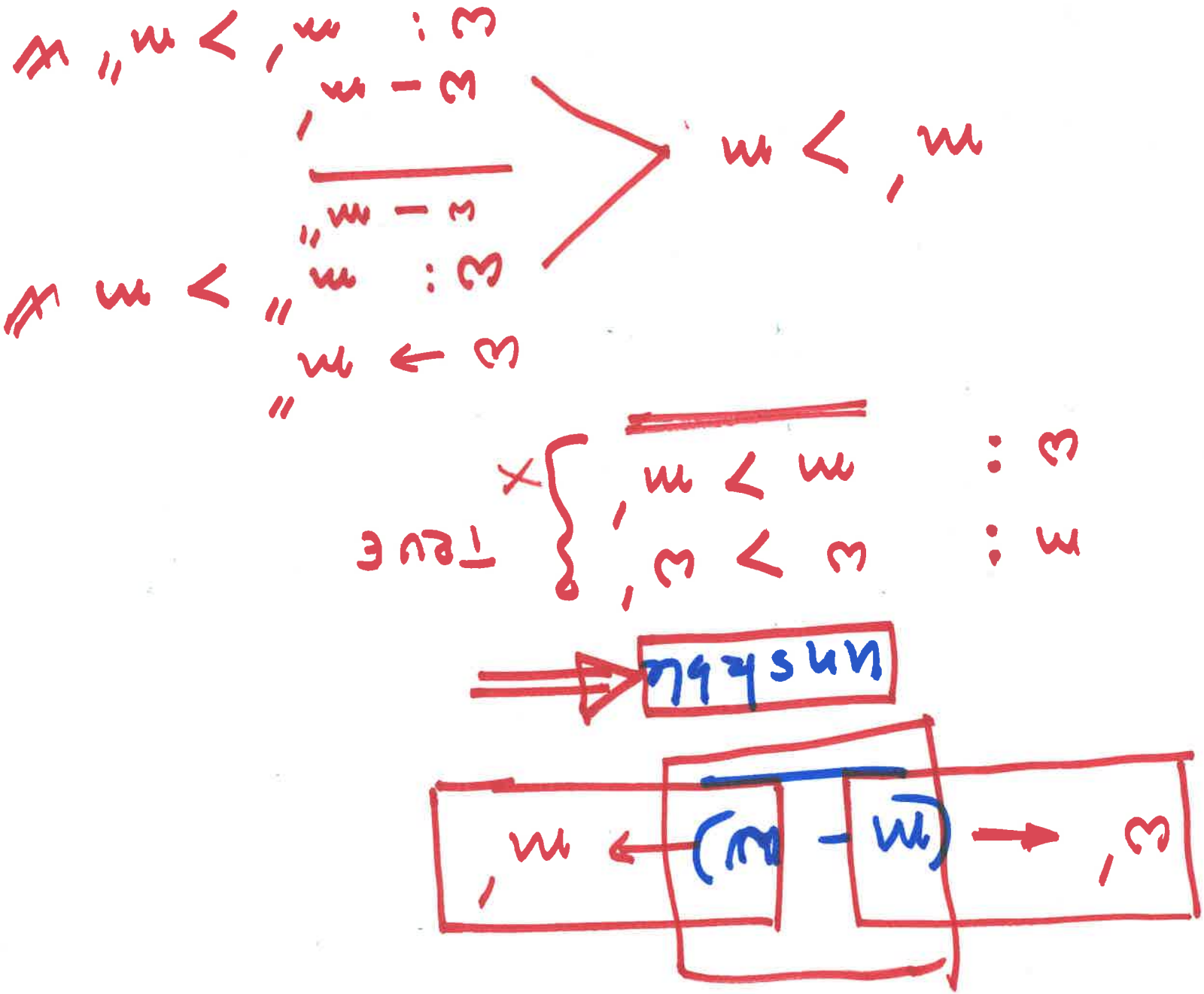
D . . . . .

E . . . . .

$O(n^2)$

1 - E

1 - D



m_1 : $w_1 > w_2$

m_2 : $w_1 > w_2$

w_1 : $m_1 > m_2$

w_2 : $m_1 > m_2$

$m_1 - w_1$

$m_2 - w_2$

---

m_1 : $w_1 > w_2$

m_2 : $w_2 > w_1$

w_1 : $m_2 > m_1$

w_2 : $m_1 > m_2$

$m_1 - w_1$

$m_2 - w_2$

} S.M

$m_1 - w_2$

$m_2 - w_1$

} $\S$ M

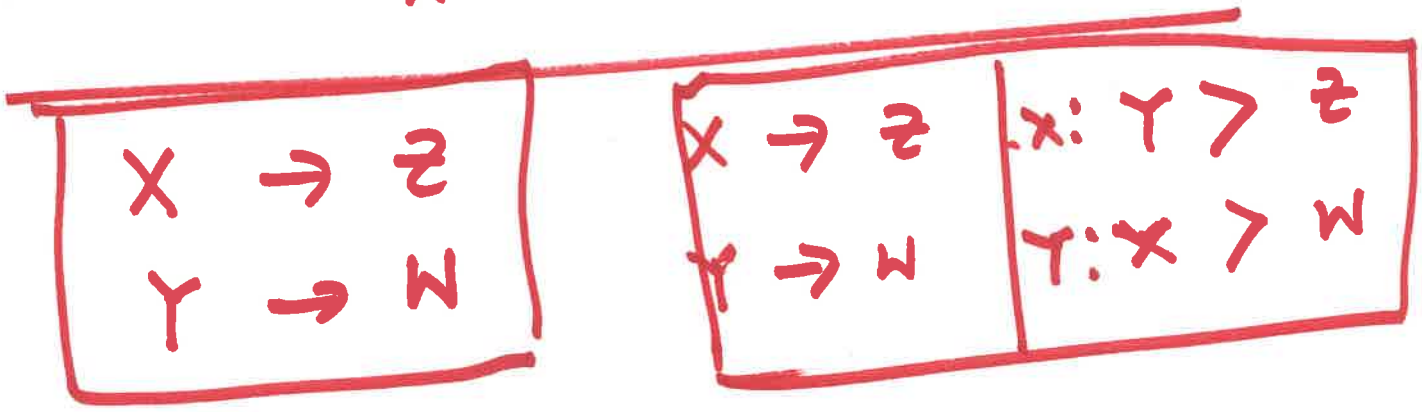
x : App ; Y : Hospital

x prefers Y to its assigned hospital Z

Y " x to it admitted std W

$x \to Y$ x : $Y > Z$

$Y \leftarrow x$ Y : [redacted] $W > X$



unstable matchy