Claim: Evy woman gets matched to her worst valid partner in GS. (S^*) ←

Pf. By contradiction.

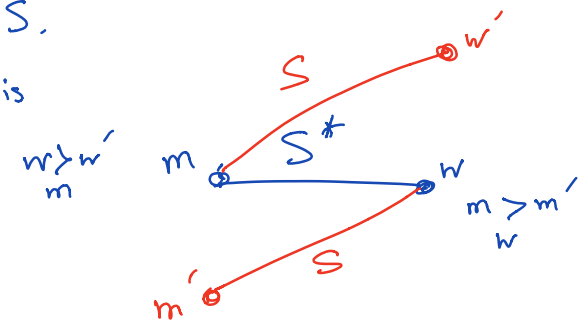
Supp ∃w gets matched to m is S^*

m is not w's worst valid partner ⇒ ∃ stable matching S s.t. w gets to matched to m′ and $m \underset{w}{>} m'$

Say w′ is m's partner in S.

I claim $w \underset{m}{>} w'$. BC S^* is man-optimal.

⇒ (m, w) is an unstable pair for S. Contradiction!



Order $\sqrt{n^n}$, $n^{5/3}$, $2^{\sqrt{\lg n}}$, 2^n, $\frac{n^2}{\lg n}$

Rule for lg:

$$\lg a \cdot b = \lg a + \lg b \qquad \lg a^b = b \cdot \lg a$$

$$\lg n^{5/3} = \frac{5}{3} \lg n \quad (2)$$

$$\lg 2^{\sqrt{\lg n}} = \sqrt{\lg n} \cdot \lg 2 = \sqrt{\lg n} \quad (1)$$

$$\lg 2^n = n \cdot \lg 2 = n \quad (4)$$

$$\lg \sqrt{n^n} = \lg (n^n)^{1/2} = \frac{1}{2} \lg n^n = \frac{1}{2} \cdot n \cdot \lg n \quad (5).$$

$$\lg \frac{n^2}{\lg n} = \lg n^2 - \lg (\lg n) = 2 \lg n - \lg \lg n \quad (3)$$