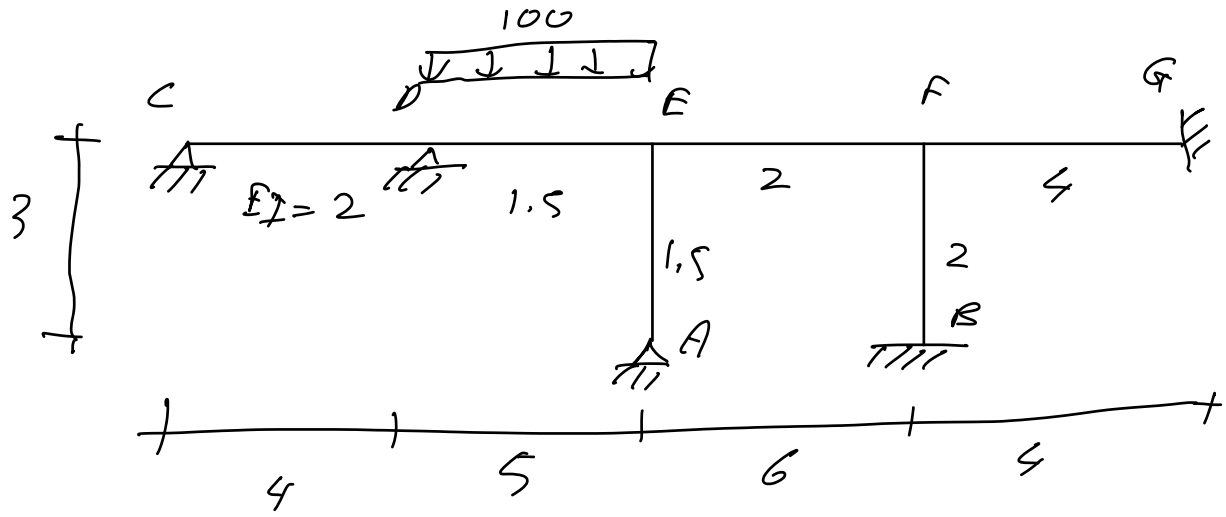
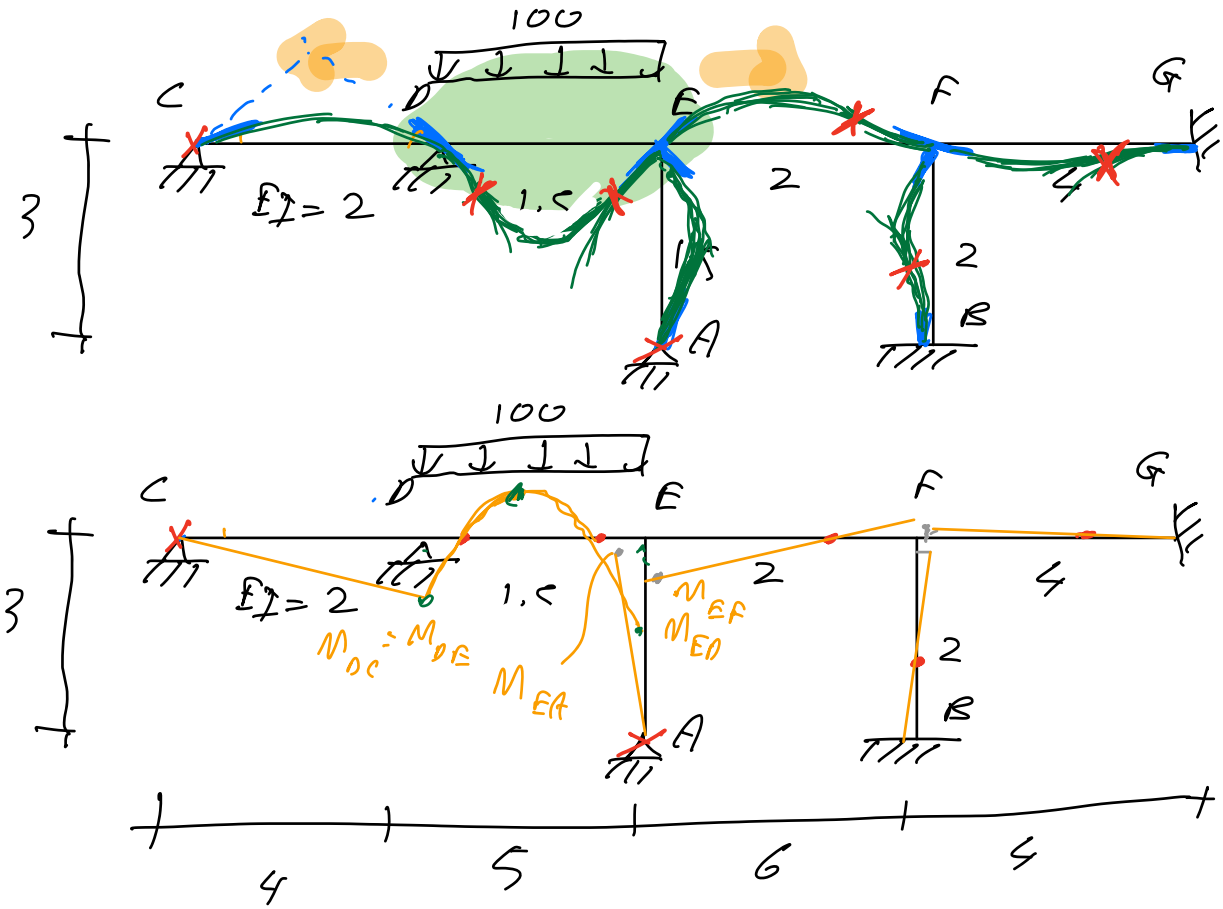
CIE 418: Lecture 9, Dec 6

- Look at assignments:
  - problem areas
- Start Plastic Limit Analysis

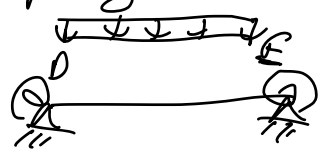


→ Sketch deflected shape

→ Sketch moment diagram



- Isolate loaded members
- Find left and right rotary spring factors



$$k_L = \frac{3\left(\frac{EI}{L}\right)_{CD}}{4\left(\frac{EI}{L}\right)_{DE}}$$

stiffness factor

$$k_R = \frac{3\left(\frac{EI}{L}\right)_{EA} + 4\left(\frac{EI}{L}\right)_{EF}}{4\left(\frac{EI}{L}\right)_{DE}}$$

EI, L of members → k_L, k_R

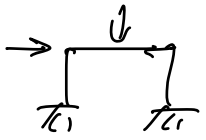
k_L, k_R → d_{IL}, d_{IR} L_{eff}

d_{IL}, d_{IR} L_{eff} → $M_{positive\ max}$ M_L, M_R

$$M_{positive\ max} = \frac{w L_{eff}^2}{8}$$

$$d_I = \frac{0.92k}{3+4k} \times L$$

Plastic Limit Analysis



→ See notes