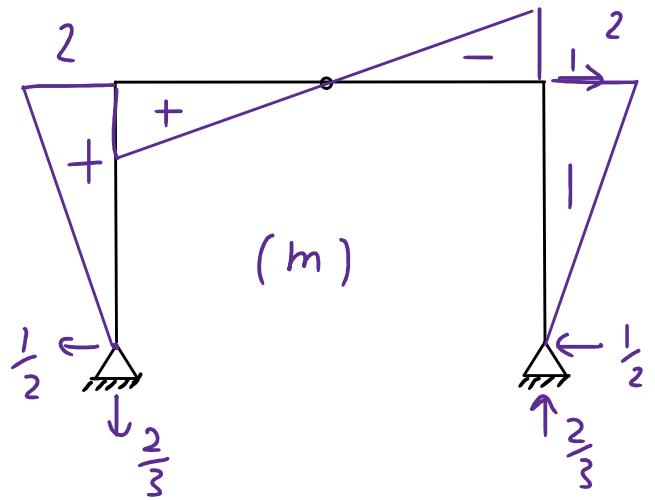
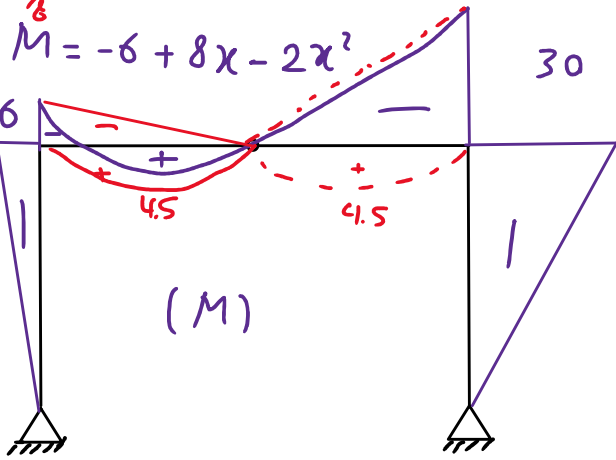
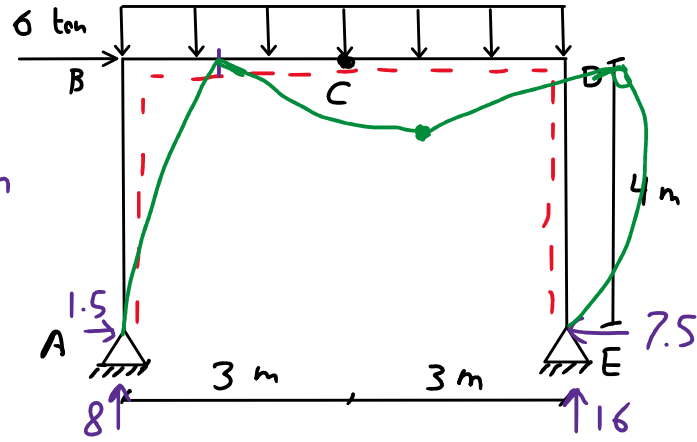
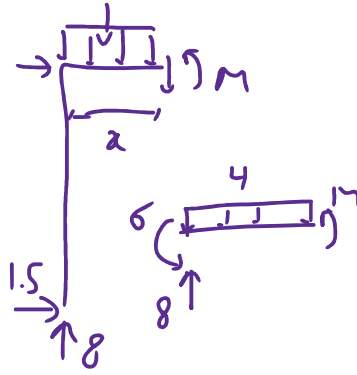
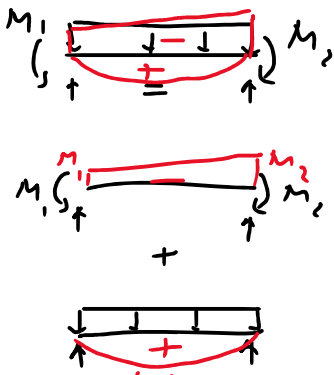


Deflection Energy7

Wednesday, December 6, 2023 9:32

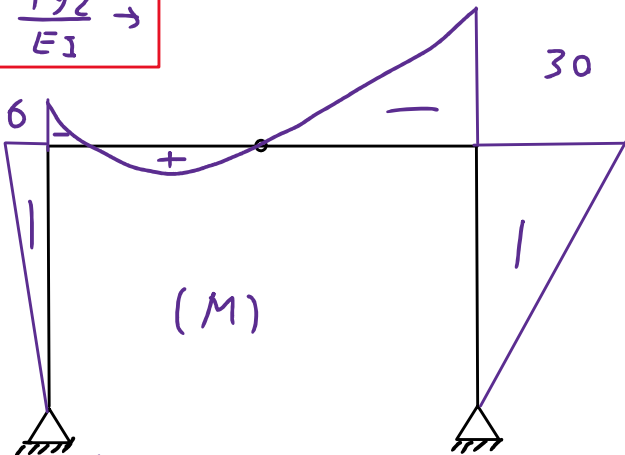
مثال: تغییر مکان افقی و چرخش D، چرخش سمت چپ پفصل C، $\Delta \theta_c$



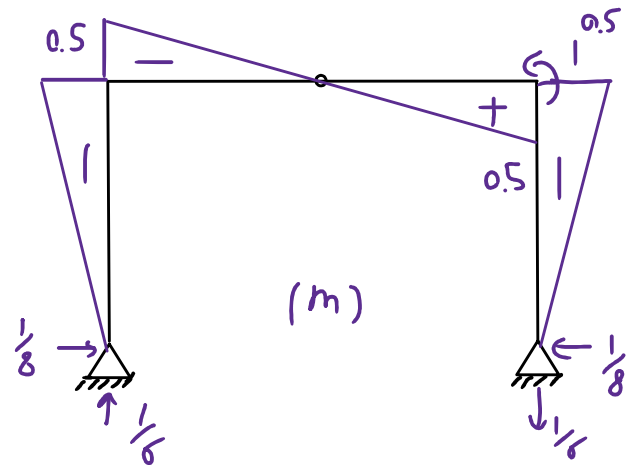
$$1 \times \delta_D = \int \frac{mM}{EI} dx$$

$$EI\delta_D = \left(\frac{4}{3}\right)(2)(-6) + \left(\frac{4}{3}\right)(-2)(-30) + \left(\frac{6}{8}\right)[(2)(-6) + 0 + (-2)(-30)] = 192$$

$$\delta_D = \frac{192}{EI} \rightarrow$$

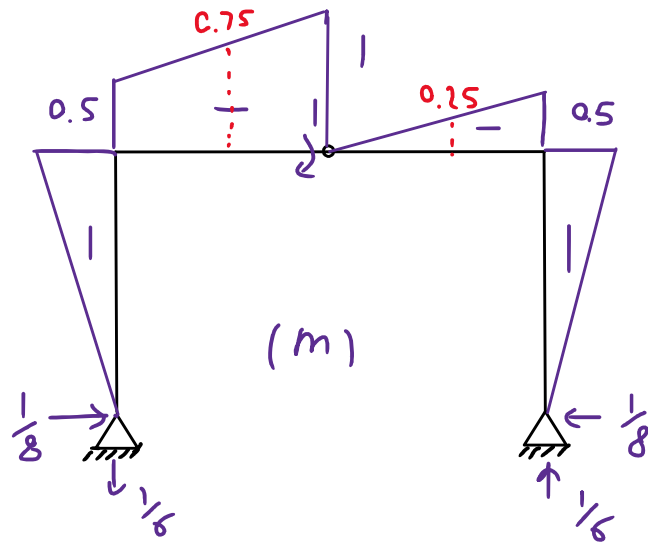
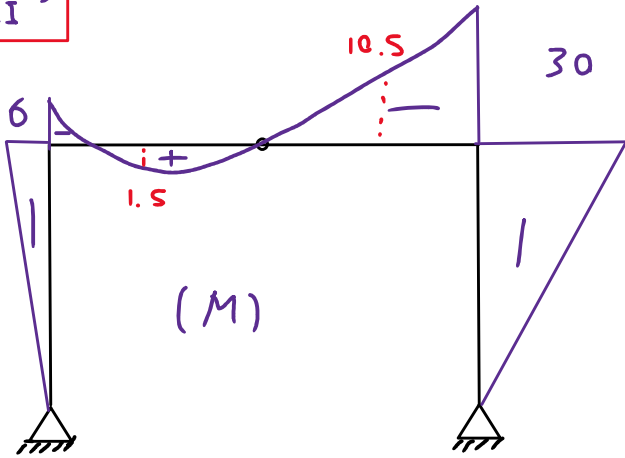


$$1 \times \theta_D = \int \frac{mM}{EI} dx$$



$$EI \theta_0 = \left(\frac{4}{3}\right)(-0.5)(-6) + \left(\frac{4}{3}\right)(-0.5)(-30) + \left(\frac{6}{6}\right) [(-0.5)(-6) + 0 + (0.5)(-30)] = 12$$

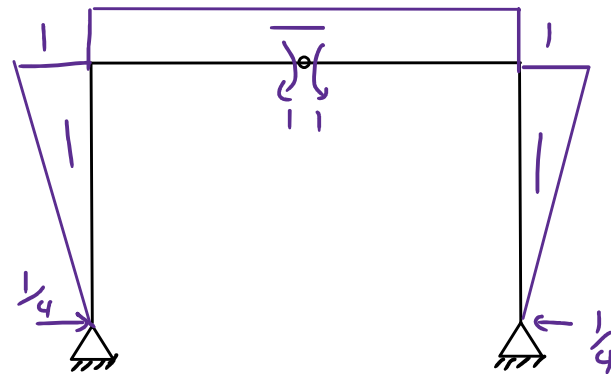
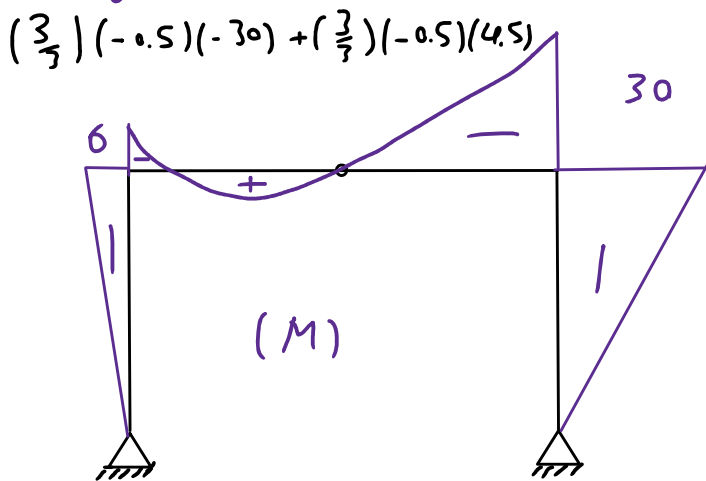
$$\theta_0 = \frac{12}{EI} \curvearrowright$$



$$1 \times \theta_{cl} = \int \frac{mM}{EI} dx$$

$$EI \theta_{cl} = \left(\frac{4}{3}\right)(-0.5)(-6) + \left(\frac{4}{3}\right)(-0.5)(-30) + \left(\frac{3}{6}\right) [(-0.5)(-6) + 4(-0.75)(1.5) + 0] + \left(\frac{3}{6}\right) [0 + 4(-0.25)(-10.5) + (-0.5)(-30)] = 36$$

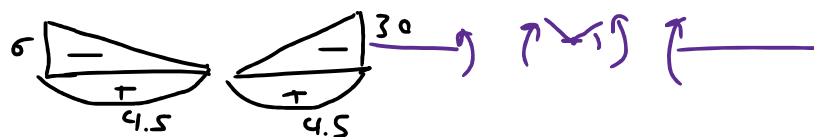
$$\theta_{cl} = \frac{36}{EI} \curvearrowright$$



$$1 \times \Delta \theta_c = \int \frac{mM}{EI} dx$$

$$EI \Delta \theta_c = \left(\frac{4}{3}\right)(-1)(-6) + \left(\frac{4}{3}\right)(-1)(-30) + \left(\frac{6}{6}\right) [(-1)(-6) + 0 + (-1)(-30)] = 84$$

$$\Delta \theta_c = \frac{84}{EI} \curvearrowright$$



$$\frac{1}{2}(-6)(3) + \frac{1}{2}(-30)(3) + 2 \times \frac{2}{3} \times 4.5 \times 3 = 36$$

-9 -45 +18

