

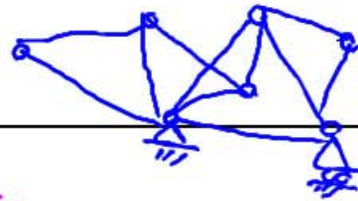
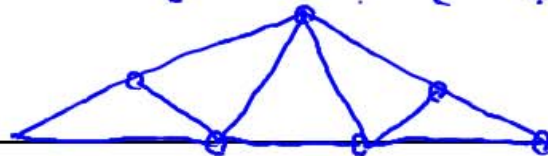
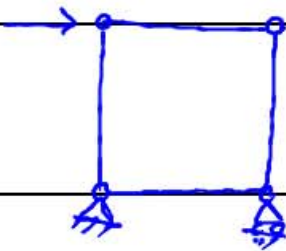
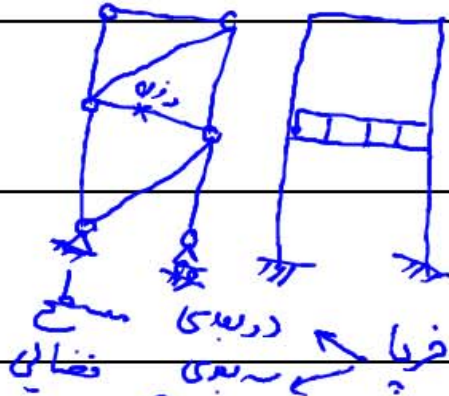
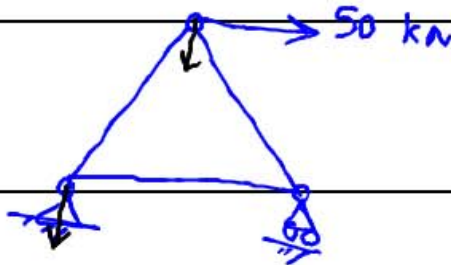
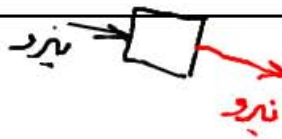
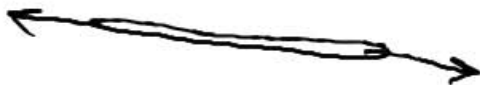
فصل ۷ تحلیل سازه (نیروی)

کمانش
Buckling

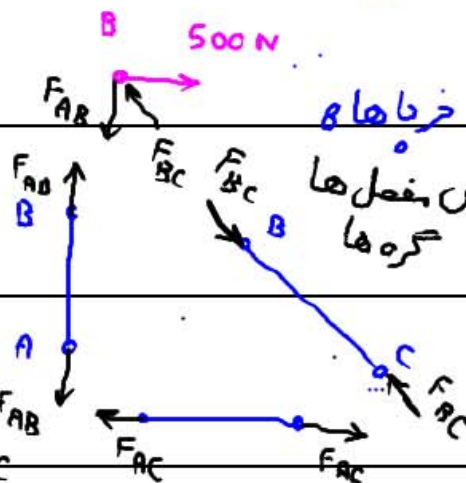
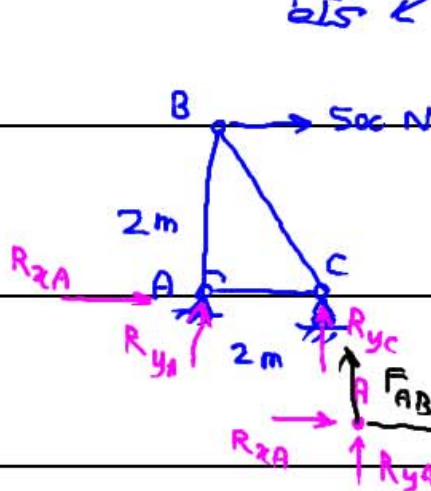
خریبا

مجموعی از اجزاء دو نیرویی باشد
حداقل یک عنصر چند نیرویی دارد
قاب ، ماشین

سازه



خریبا
ساده
ترکیب
تخت



روش تحلیل خرابیها

① روش مفصلها
گرهها



① - نيزدیک تری گام

$$\begin{cases} \Sigma F_x = 0 \\ \Sigma F_y = 0 \\ \Sigma F_z = 0 \end{cases}$$

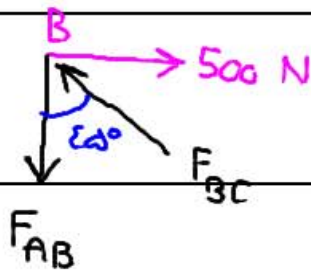
$$\Sigma M_A = 0 \quad 500 \times 2 - R_{yc} \times 2 = 0$$

$$R_{yc} = 500 \text{ N}$$

$$\Sigma F_y = 0 \quad R_{yA} + 500 = 0 \quad R_{yA} = -500 \text{ N}$$

$$\Sigma F_x = 0 \quad 500 + R_{xA} = 0 \quad R_{xA} = -500$$

②

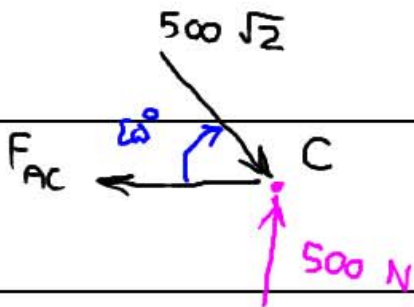


$$\Sigma F_x = 0 \quad 500 - \frac{\sqrt{2}}{2} F_{BC} = 0$$

$$F_{BC} = 500\sqrt{2} \text{ N}$$

$$\Sigma F_y = 0 \quad 500 - F_{AB} = 0$$

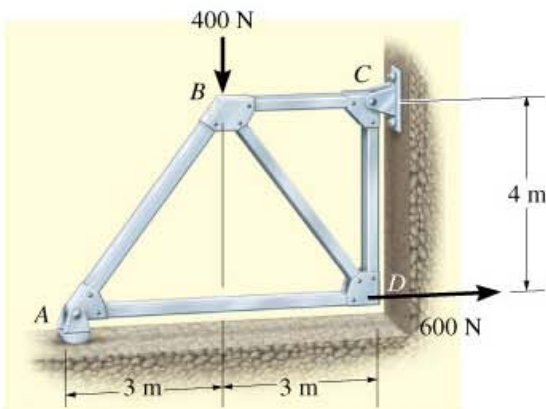
$$F_{AB} = 500$$



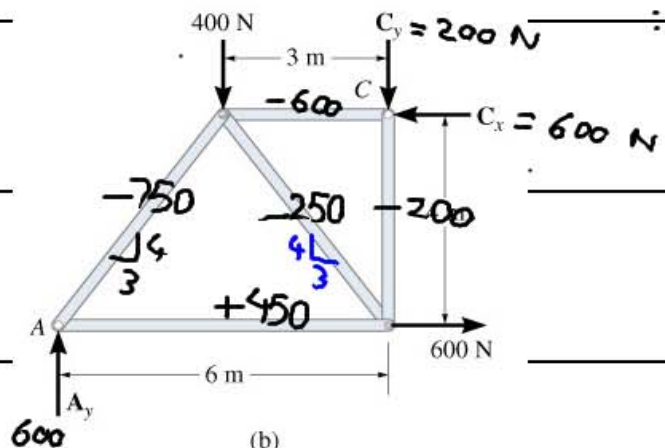
$$\Sigma F_y = 0 \quad 500 - 500 = 0$$

$$\Sigma F_x = 0 \quad -F_{AC} + 500 = 0$$

$$F_{AC} = +500 \text{ N}$$



(a)

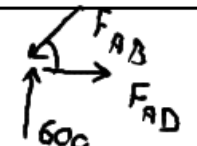


(b)

مثال:

لاستیک بیرونی - تلبه 5 هجری

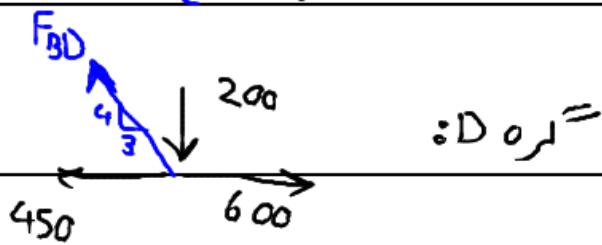
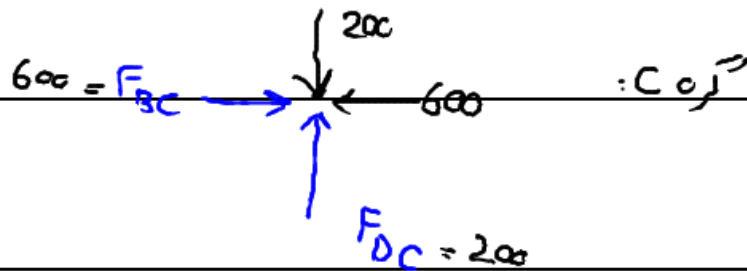
$$A_y \times 6 - 400 \times 3 - 600 \times 4 = 0 \rightarrow A_y = 200 + 600 = 800 \text{ N}$$

$$+\uparrow \Sigma F_y = 0 - \frac{4}{5} F_{AB} + 600 = 0$$


: A گره (2)

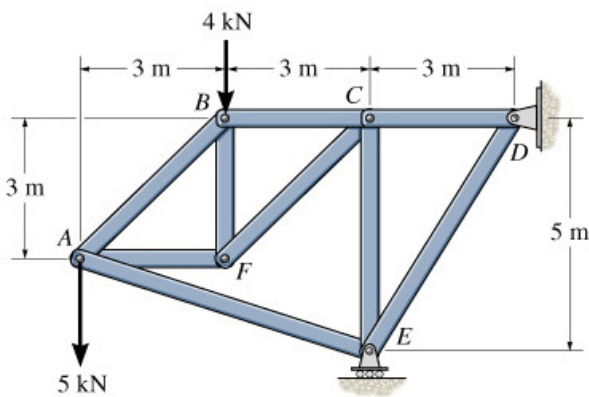
$$F_{AB} = \frac{5}{4} \times 600 = 750 \text{ N}$$

$$\Sigma F_x = 0 \quad F_{AD} - \frac{3}{5} \times 750 = 0 \quad F_{AD} = 450 \text{ N}$$



$$\Sigma F_y = 0 \quad \frac{4}{5} F_{BD} - 200 = 0$$

$$F_{BD} = \frac{5}{4} \times 200 = 250 \text{ N}$$



خرمای مرب