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مقاطع فيديو هات لشرح المقرر بشكل وافي

ملخص للمادة Pdf للمذكرة واطراجة

محاضرات مباشرة علي برنامج زووم

مناقشة الأجزاء الغير مفهومة

تواصل مستمر مع معلم المادة

للتواصل

0567630097

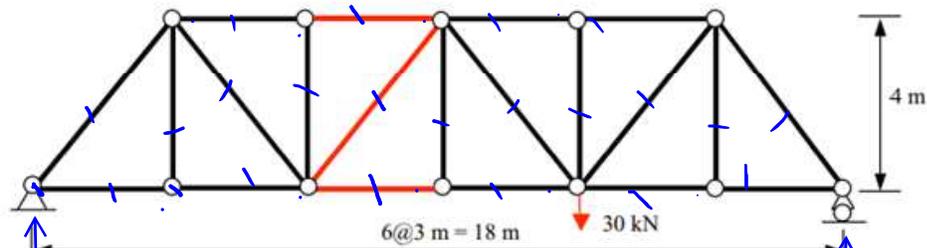
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استاتيكا	فيزياء
الكترونيا	دوائر كهربية
هيدروليكا	ميكانيكا الانشآت



Example No.4

Find member forces in bars in the 3rd panel from the left of the truss shown



Solution

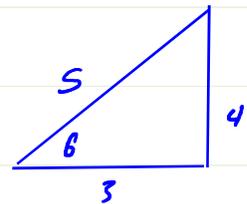
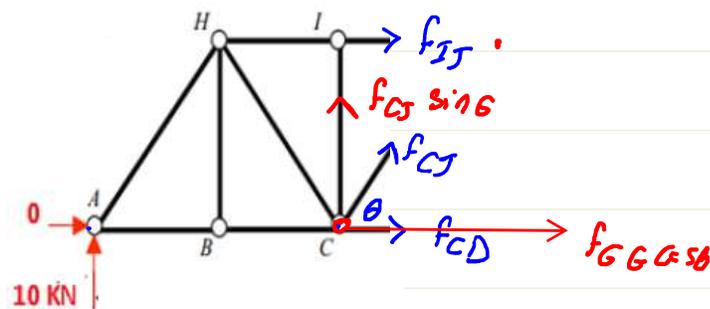
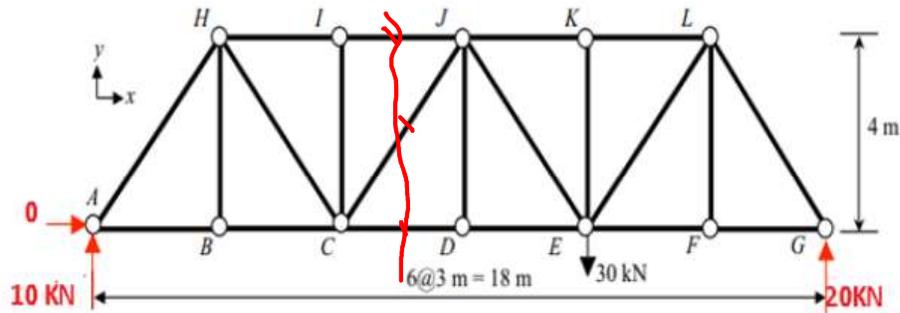
We shall solve this problem by the method of section with the following

$$m + r = 2J$$

$$21 + 3 = 2 \times 12$$

$$24 = 24 \text{ statically determinate}$$

$$\sum M_A = 30 \times 12 - V_B \times 18 = 0 \Rightarrow V_B = 20 \text{ kN}$$



$$\sum f_y = 10 + f_{CJ} \times 0.8 = 0$$

$$\sin \theta = 0.8$$

$$f_{CJ} = -12.5 \text{ kN} = 12.5 \text{ kN Comp}$$

$$\cos \theta = 0.6$$

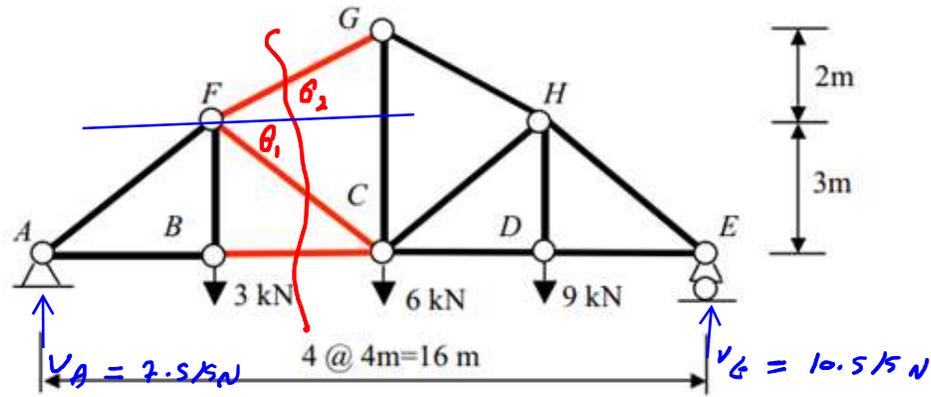
$$\sum M_C = 10 \times 6 + f_{IJ} \times 4 =$$

$$f_{IJ} = -15 \text{ kN} = 15 \text{ kN Comp}$$

$$\sum f_x = -12.5 \times 0.6 + f_{CD} + 15 = 0 \Rightarrow f_{CD} = 22.5 \text{ kN Ten}$$

Example 5

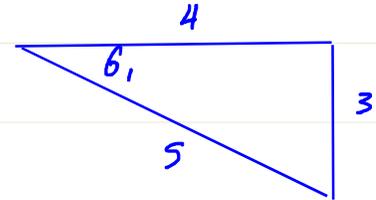
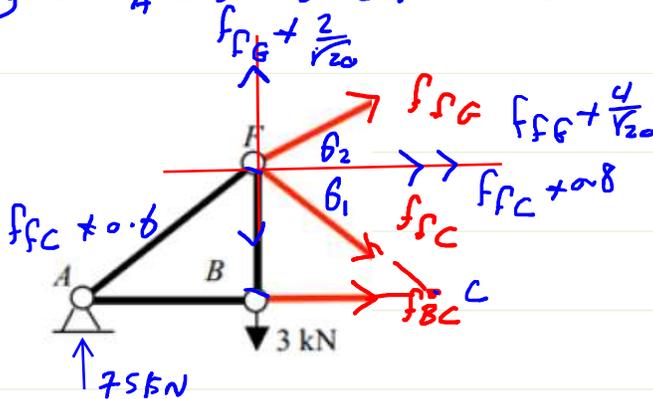
Find member forces in bars in the 2nd panel from the left of the truss shown.



$$\sum M_A = 3 \times 4 + 6 \times 8 + 9 \times 12 - V_E \times 16 = 0$$

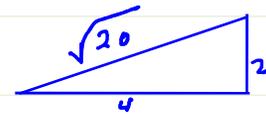
$$V_E = 10.5 \text{ kN}$$

$$\sum F_y = V_A - 3 - 6 - 9 + 10.5 = 0 \Rightarrow V_A = 7.5 \text{ kN}$$



$$\sin \theta_1 = 0.6$$

$$\cos \theta_1 = 0.8$$



$$\sin \theta_2 = \frac{2}{\sqrt{20}}$$

$$\cos \theta_2 = \frac{4}{\sqrt{20}}$$

$$\sum M_C = 7.5 \times 8 - 3 \times 4 + f_{FG} + \frac{4}{\sqrt{20}} \times 3$$

$$+ f_{FG} + \frac{2}{\sqrt{20}} \times 4 = 0$$

$$f_{FG} = -10.73 \text{ kN}$$

$$\sum F_y = 7.5 - 3 + \cancel{f_{FG}} + \frac{2}{\sqrt{20}} - f_{FC} + 0.6 = 0$$

$$f_{FC} = -0.5 \text{ kN}$$

$$\sum F_x = f_{BC} + (-0.5) \times 0.8 - 10.73 + \frac{4}{\sqrt{20}} = 0$$

$$f_{BC} = 10 \text{ kN}$$