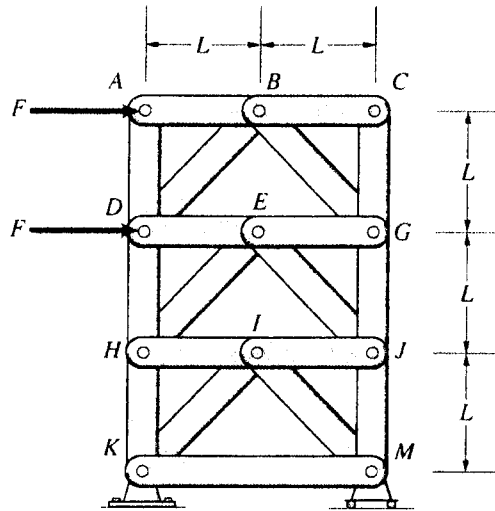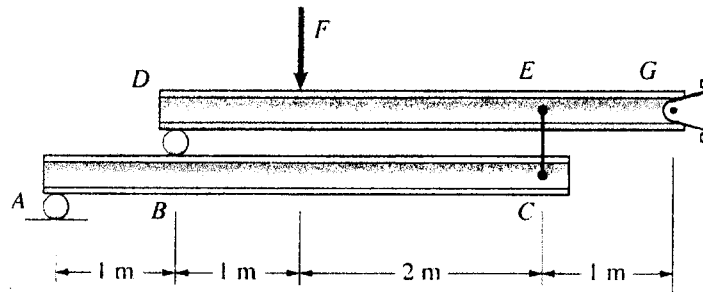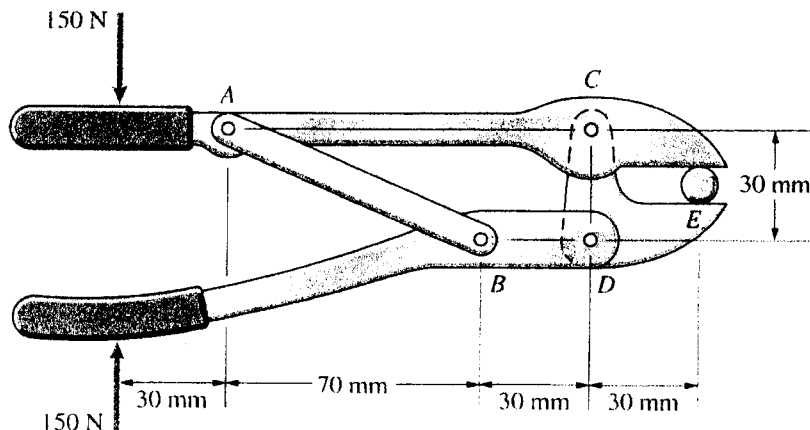本試題是否可以使用計算機：　☑可使用　，　□不可使用　（請命題老師勾選）

1. (15%) The load $F = 20$ kN and the dimension $L = 2$ m. Determine the axial force in member HK.

2. (15%) The force $F = 10$ kN. Determine the forces on member ABC.

3. (20%) What forces are exerted on the bolt at E as a result of the 150-N forces on the pliers?
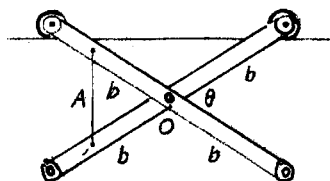

（背面仍有題目.請繼續作答）

4. (15%) The small car which has a mass of 20 kg rolls freely on the horizontal track and carries the 5 kg sphere mounted on the light rotating rod with $r=0.4$ m. A geared motor drive maintains a constant angular speed $\dot{\theta}=4$ rad/s of the rod. If the car has a velocity $v=0.6$ m/s when $\theta=0$, calculate v when $\theta=60°$. Neglect the mass of the wheels and any friction.
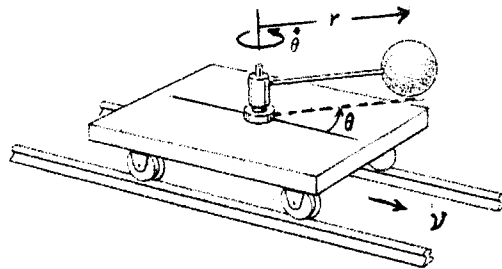
5. (15%)The disk with the circular slot of 200 mm radius rotates about O with a constant angular velocity ω=15 rad/s. Determine the acceleration of the slider A at the instant when it passes the center of the disk if, at that moment, $\dot{\theta}=12$ rad/s and $\ddot{\theta}=0$.
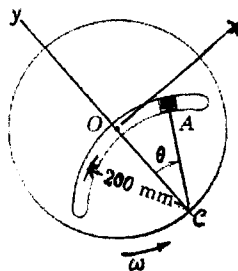
6. (20%) The two uniform slender bars, each of mass m, are suspended in the vertical plane by the small rollers which bear on the horizontal surface. The bars are prevented from collapse by the cord A. If the cord is cut, determine the initial downward acceleration of the pin at O which joins the bars.

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