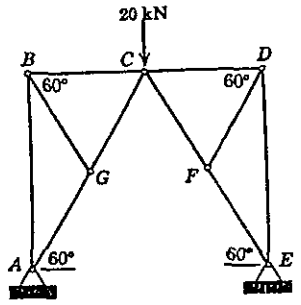
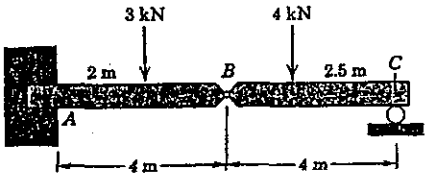
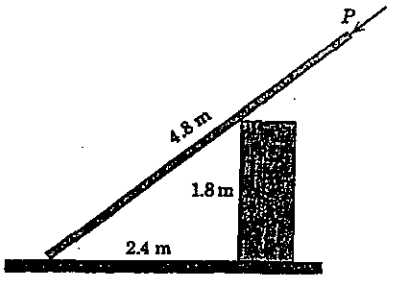
(一). Determine the force in each member of the pair of trusses which support the 20-kN load at their common joint C. (15 分)



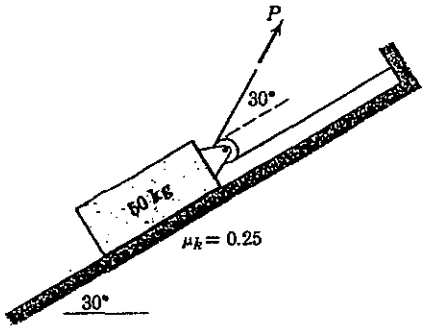
(二). Construct the moment diagram for the two beams loaded as shown and connected by the hinge joint at *B*. Specify the bending moment at *A*. (15 分)



(三). Determine the force *P* required to move the uniform 50-kg plank from its rest position shown if the coefficient of static friction at both contact location is 0.50. (15 分)

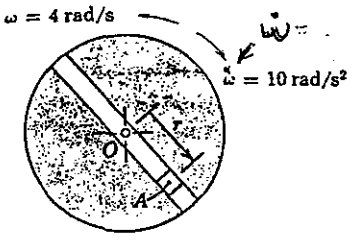


(四). Determine the tension *P* in the cable which will give the 50-kg block a steady acceleration of 2 m/s^2 up the incline. (15 分)



接背面

(五). At the instant represented the disk with the radial slot is rotating about O with a counterclockwise angular velocity of 4 rad/s which is decreasing at the rate of 10 rad/ s^2. The motion of slider A is separately controlled, and at this instant r = 150 mm, $\dot{r}$ = 125 mm/s, and $\ddot{r}$ = 2025 mm/s^2. Determine the absolute velocity and acceleration of A for this position. (20 分)



(六). The solid sphere is resting on a platform which is given a horizontal acceleration a = 2g. Determine the acceleration $\bar{a}$ of the center of the sphere if the coefficient of friction between the sphere and the platform is (*a*) 0.80 and (*b*) 0.40. (20 分)