一、 Compute the forces in members EB and EC of the truss in Fig.1. (20%)

二、 Determine the smallest value of the coefficient of friction for which three identical cylindrical rods may be placed as shown in Fig.2. (20%)

三、 Determine the minimum acceleration of the block B in Fig.3 if A is not to move relative to B. The coefficient of friction between A and B is 0.2, and the horizontal plane is smooth. (20%)

四、 The a and b axes in Fig.4 are parallel. The moment of inertia of the semi-circular area with respect to the a axis is $\pi r^4/4$. Determine the moment of inertia of the area with respect to the b axis. (20%)

五、 Classify each of the given structures (Fig.5) as stable or unstable ; if stable, further classify as determinate or indeterminate. (20%)

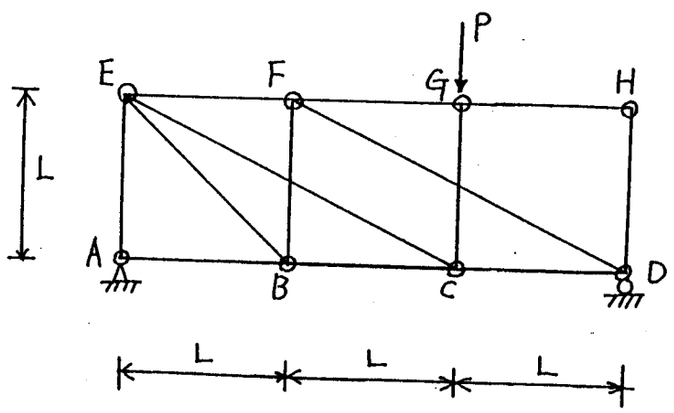


Fig. 1

(背面仍有題目,請繼續作答)

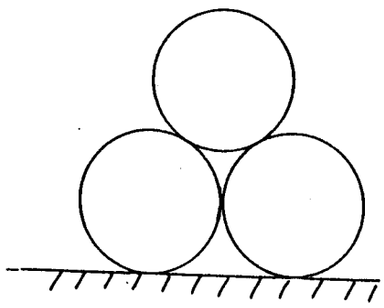


Fig. 2.

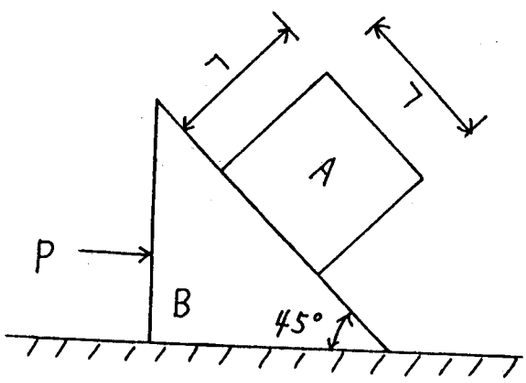


Fig. 3.

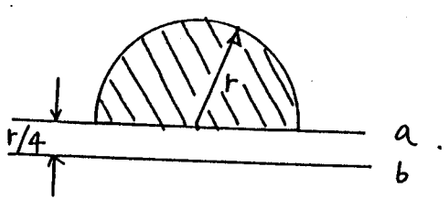
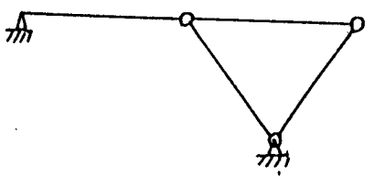
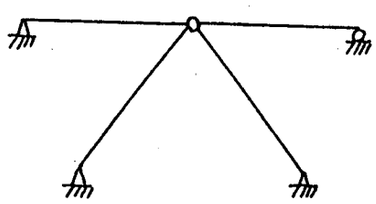


Fig. 4.



(a)



(b)

Fig. 5