中國文化大學 九十三 學年度 第一學期 期末 考試試卷					
考試科目	任課老師	系級	考試日期	份數	備註
應用力學	陳為仁	機一 A	94/01/18	65	可用計算機

1. The force system acting on the brace is shown in Fig. 1. Replace this force system by an equivalent resultant force and couple moment acting at point A. (20)

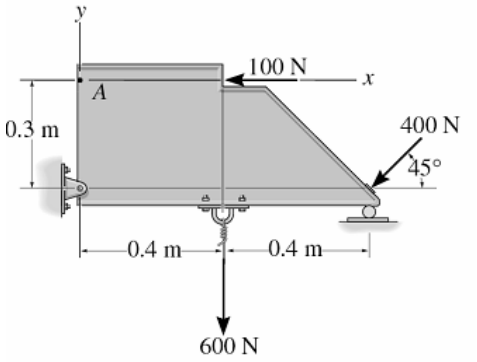

Fig. 1

2. A foot level is pin-supported at A and connected to a short link at B as shown in Fig. 2. A force of 100 N is applied to the pedal so that the spring is stretched 40mm. The spring constant of the spring is k = 5 N/mm. (1) Draw the free-body diagram of the foot lever. (2) If the lever is in equilibrium, determine the reaction forces at support A and the force exerted by the rod at B. (25)

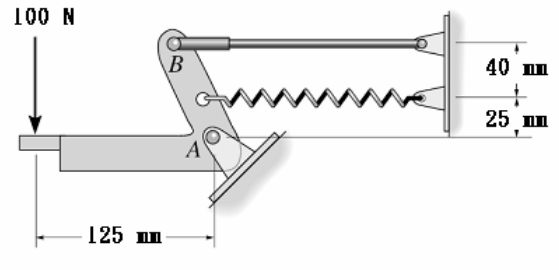

Fig. 2

3. The link shown in Fig. 3 is pin-connected at A and rests against a smooth support at B. (1) Draw the free body diagram of the link. (2) Compute the reactions at support B and the pin A. (25)

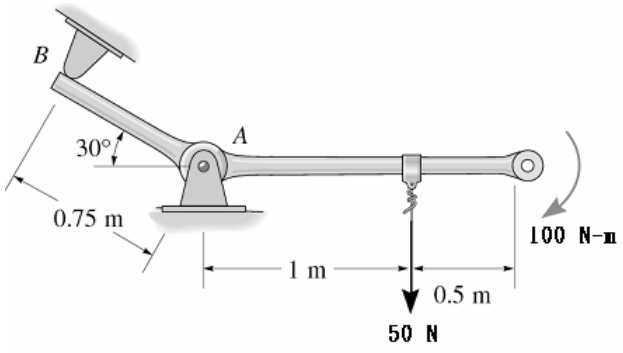

Fig. 3

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4. The mast AB is held in equilibrium by a ball-and-socket joint A and two cables BC and BD as shown in Fig. 4. Determine the tension in cables BC and BD and the reactions at the joint A. (25)

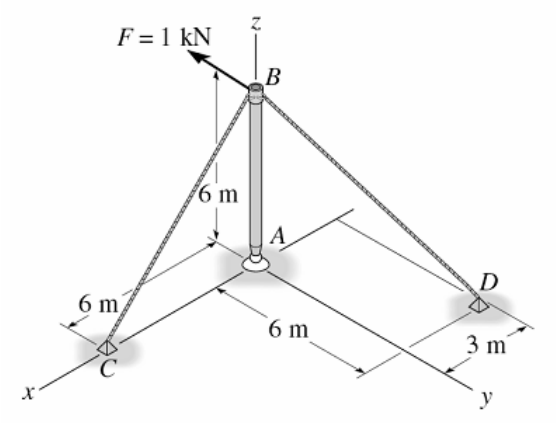

Fig. 4

5. The truss is subjected to the loads at joint A and C shown in Fig. 5. (1) Determine the support reactions at joints A and C. (2) Determine the force in each member of the truss and indicate whether the members are in tension or compression. (25)

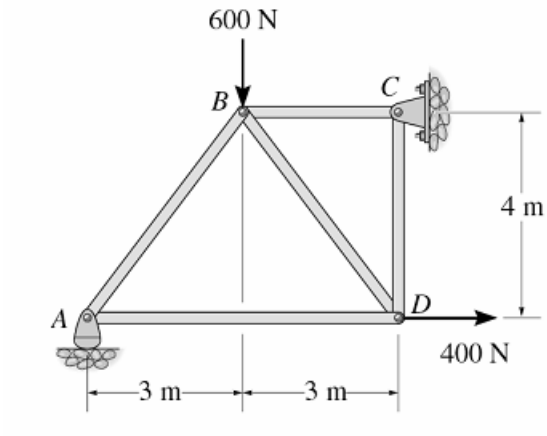

Fig. 5