

國立嘉義大學九十二學年度轉學生招生考試試題

科目：工程力學

(請將答案寫在答案卷上)

- The two identical cylinders shown in Figure 1 weigh W_1 each, and the cubical block weight W_2 . Neglecting friction,
 - draw the necessary free-body diagrams (10%),
 - determine all the contact forces. (15%)

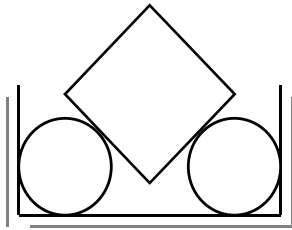


Figure 1.

- Using the method of joints, determine the force in each member of the truss shown in Figure 2. Indicate whether the members are in tension or compression. (25%)

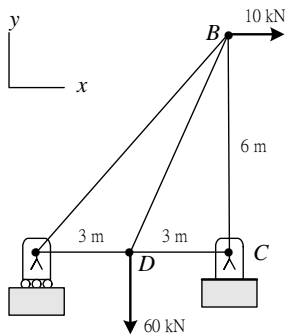


Figure 2

- A beam is supported and loaded as shown in the figure 3. Draw the shear-force and bending-moment diagram for this condition. (25%)

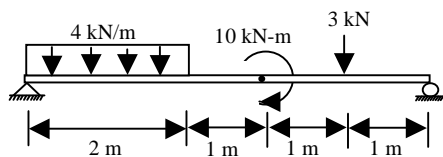


Figure 3.

- A sphere of radius r with an initial clockwise angular velocity W_0 is placed in the corner formed by the floor and a vertical wall as shown in Figure 4. Knowing that the coefficients of kinetic friction are μ_k at A and B, derive an expression for the time required for the sphere to come to rest. (25%)

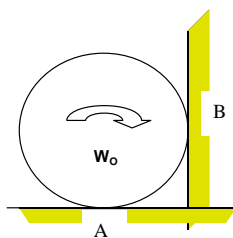


Figure 4.