

大葉大學 九十四 學年度 研究所碩士班 招生考試試題紙

系所別	組別	考試科目 (中文名稱)	考試日期	節次	備註
機械工程研究所	甲組	應用力學	3月27日	第2節 10:30~12:00	可使用計算機

註：考生可否攜帶計算機或其他資料作答，請在備註欄註明（如未註明，一律不准攜帶）

共二頁

- The force \mathbf{F} has a magnitude of 80 N and acts at the midpoint C of the thin rod as shown in Figure 1. Express the force as a Cartesian vector. 25 %
- As shown in Figure 2, the disk (radius R) rolls without slipping with angular velocity ω and angular acceleration α respectively, find the velocity and acceleration of point A and B (V_A, a_A , and V_B, a_B). 25 %
- A pendulum consists of a bob weighing 2 Kg and a massless rod 1.2 m long. The bob is raised to the position shown in Figure 3 and released from rest. Find the tension in the rod when the rod is vertical. 25 %
- As in Figure 4, $m=20$ Kg, $F=400$ N. If the block is initially at rest, and the kinetic friction coefficient $\mu_k = 0.2$, determine its velocity after it has traveled a distance 5 m. 25 %

Figure 1

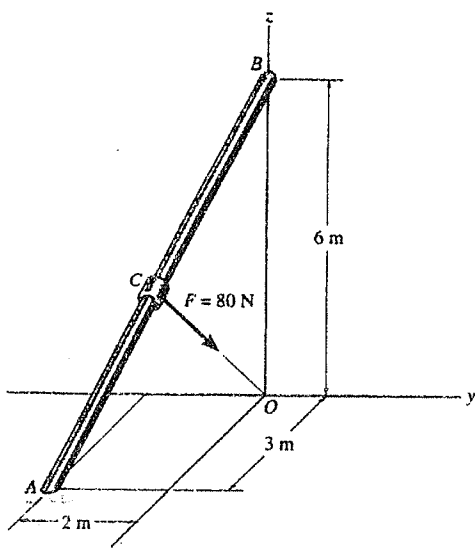


Figure 2

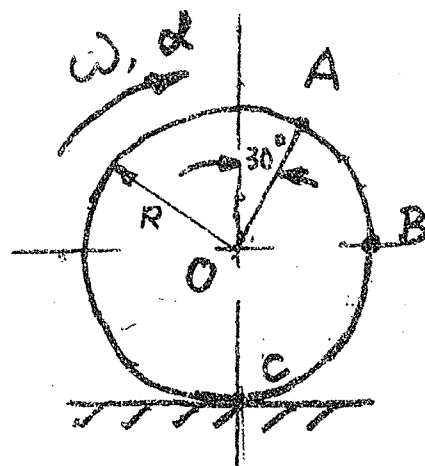


Figure 3

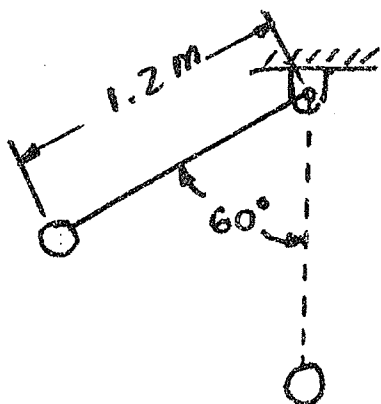


Figure 4

