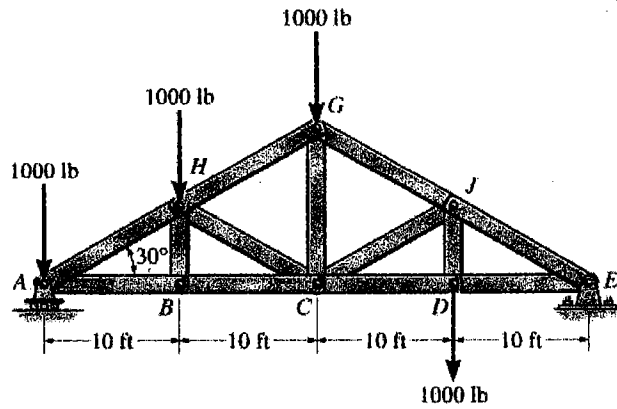


大葉大學 九十三 學年度 研究所碩士班 招生考試試題紙

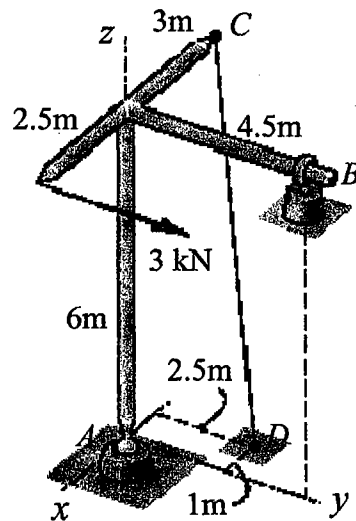
系 所 別	組 別	考 試 科 目 (中文名稱)	考 試 日 期	節 次	備 註
機械工程研究所 碩士班	甲組	應用力學	3 月 28 日 (08:30 ~ 12:00)	第二節	可使用不可程式計算機

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）
共乙頁

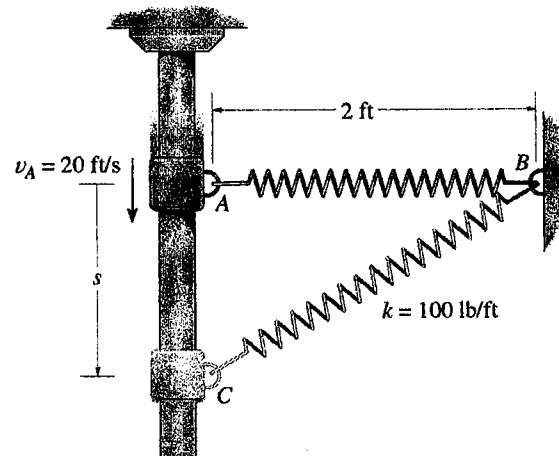
1. Determine the force in member GJ of the truss and state if the member is in tension or compression. (20%)



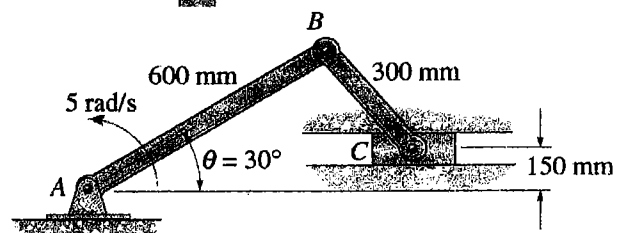
2. The welded tubular frame is secured to the horizontal x - y plane by a ball-and socket joint at A and receives support from the loose-fitting ring at B . Under the action of the 3-kN load, rotation about a line from A to B is prevented by the cable CD , and the frame is stable in the position shown. Neglect the weight of the frame compared with the applied load and determine the tension T in the cable, the reaction at the ring, and the reaction components at A . (20%)



3. The 2-lb block is given an initial velocity of 20 ft/s when it is at A . If the spring has an unstretched length of 2 ft and a stiffness of $k = 100$ lb/ft, determine the velocity of the block when $s = 1$ ft. (20%)



4. The crank AB is rotating with a constant angular velocity of 5 rad/s. Determine the velocity of block C and the angular velocity of link BC . (20%)



5. The 2-kg ball is thrown at the suspended 20-kg block with a velocity of 4 m/s. If the coefficient of restitution between the ball and the block is $e = 0.9$, determine the maximum height h to which the block will swing before it momentarily stops. (20%)

