

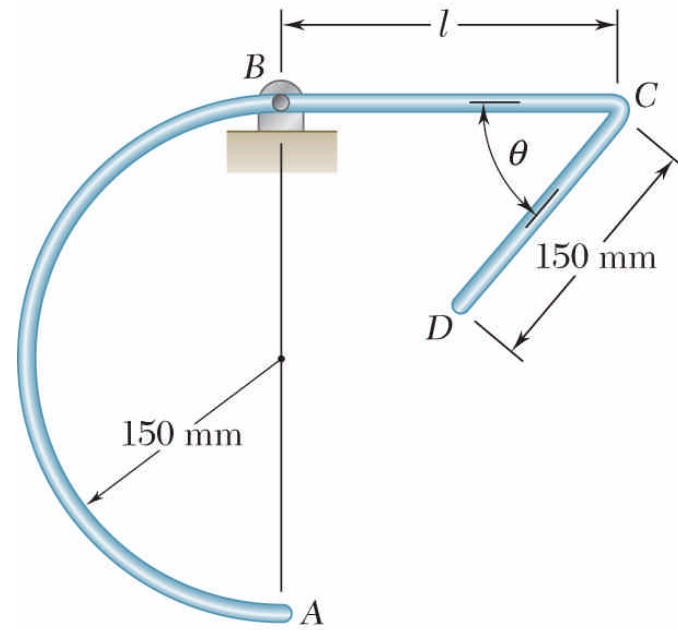
國立嘉義大學 99 學年度

生物機電工程學系碩士班 (甲組) 招生考試試題

科目：工程力學

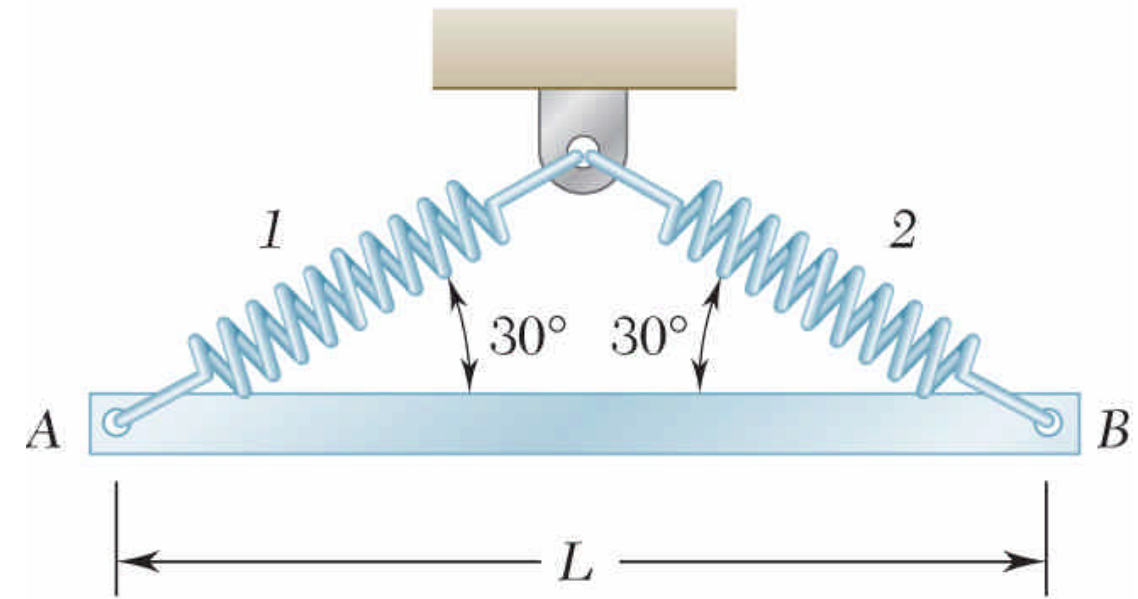
(※禁止使用計算機)

1. The homogeneous wire $ABCD$ is bent as shown and is supported by a pin at B . Knowing that $L = 200$ mm determine the angle θ for which portion BC of the wire is horizontal. (25%)



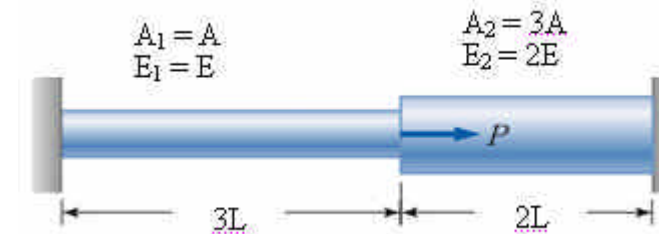
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2. A uniform slender bar AB of mass m is suspended from two springs as shown. If spring 2 breaks, determine at that instant (a) the angular acceleration of the bar, (b) the acceleration of the mass center, (c) the acceleration of point A . (25%)



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3. The composite bar shown in the following figure is firmly attached to unyielding supports. Compute the stress in each material in terms of P , A , E and L caused by the application of the axial load P . The material 1 has cross-sectional area A_1 , length $3L$ and modulus of elasticity E_1 , the material 2 has area A_2 , length $2L$ and modulus E_2 . (25%)



4. Draw the shear-force and bending-moment diagrams shown in the following figure for a beam with a uniform load of intensity q and a concentrated load P . (25%)

