

※ 考生請注意：本試題可使用計算機，並限「考選部核定之國家考試電子計算器」機型

1. The ladder of mass M rests against the wall as shown in Fig.1. If the coefficient of static friction between the ladder and both the floor and wall is μ_0 . Find θ when motion is impending. (20 分)

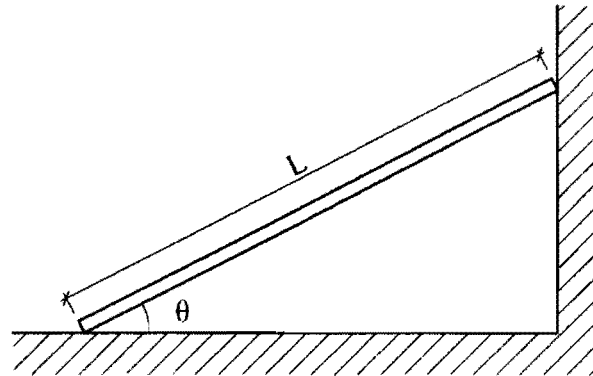


Fig.1.

2. Analyze the beam shown in Fig.2. and draw the shear and moment diagram. (30 分)

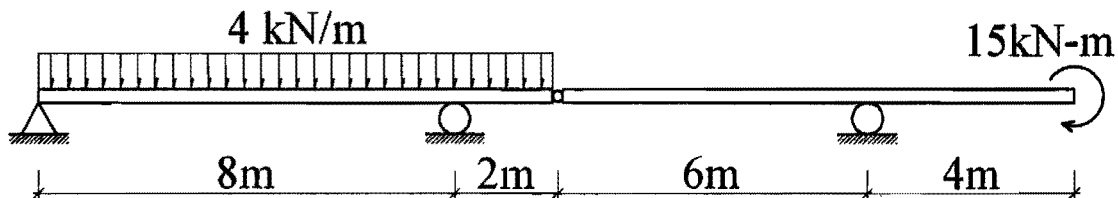


Fig.2.

3. Determine the bar force of member a, b, c for the truss shown in Fig.3. (25 分)

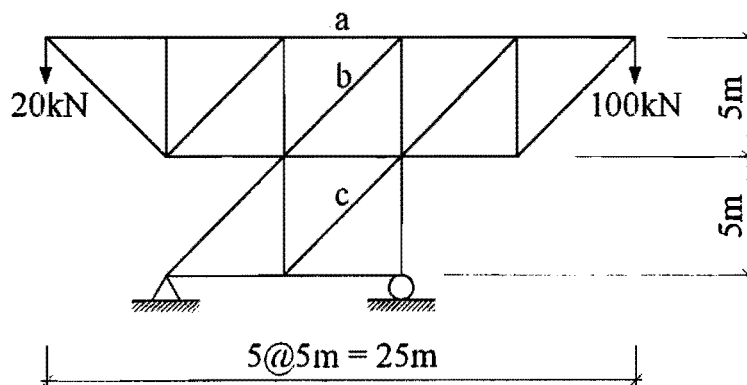


Fig.3.

(背面仍有題目,請繼續作答)

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4. 1) Derive the expression of critical loads for the slender column shown in Fig.4.
 2) Sketch the corresponding buckled shape for the smallest critical load. (25 分)

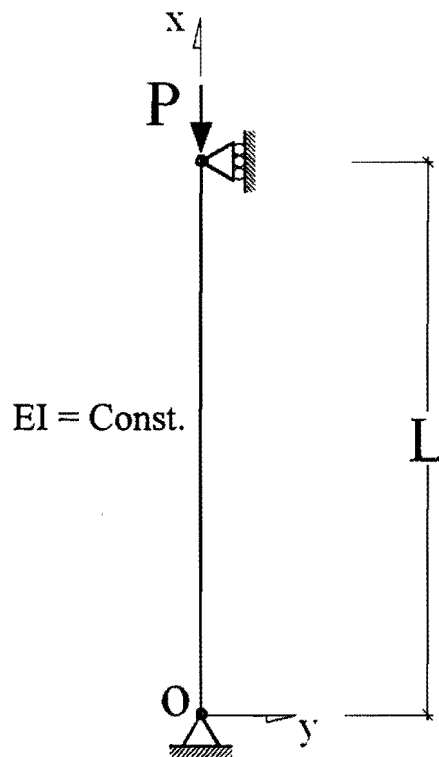


Fig.4.