

科目：工程力學 適用：土木系三

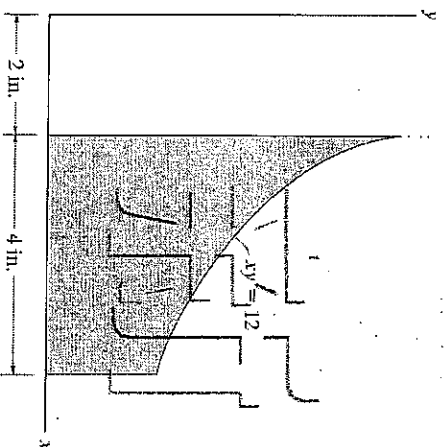
編號：812

考生注意：

1. 依次序作答，只要標明題號，不必抄題。
2. 答案必須寫在答案卷上，否則不予計分。
3. 限用藍、黑色筆作答；試題須隨卷繳回。

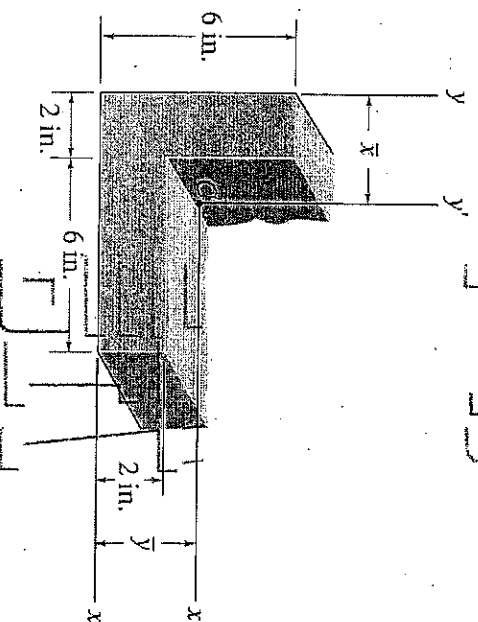
本試題
共 2 頁
第 / 頁

- (1) Determine the moment of inertia for the shaded area about the x -axis. [10%]

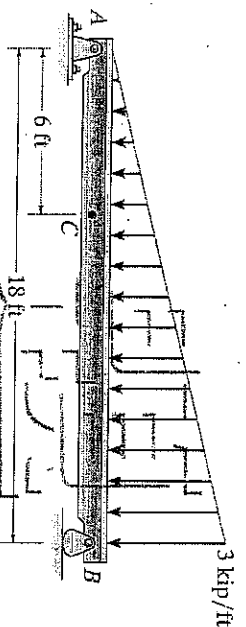


- (2) For the cross section of the beam as shown below, determine:

- (a) the distance \bar{y} to the centroid of the cross-sectional area, [10%]
 (b) the moment of inertia $\bar{I}_{x'}$ about the x' axis. [15%]



- (3) Determine the internal forces acting at a section passing through point C in the beam: (a) shear force [10%], (b) moment [15%]



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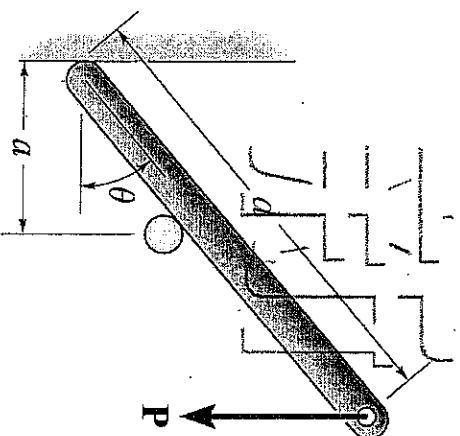
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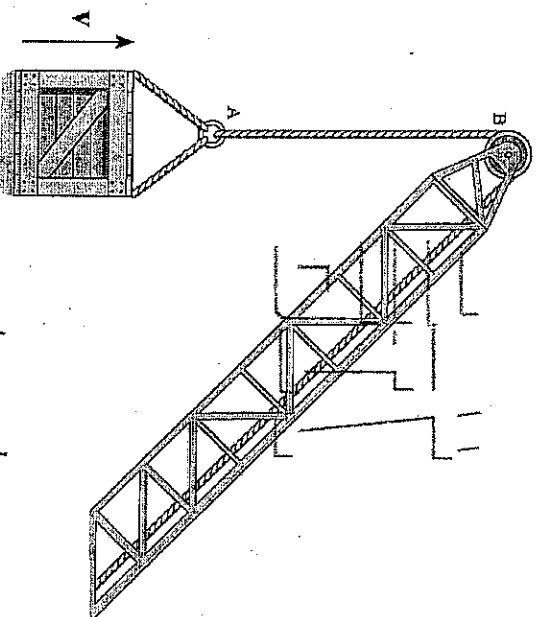
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本試題
共 2 頁
第 2 頁

- (4) Determine the distance d for placement of the load P for equilibrium of the smooth bar in position θ as shown. Neglect the weight of the bar. [20%]



- (5) The 200-kg crate is suspended from the cable of a crane. Determine the force in the cable AB when $t=2$ second if the crate is moving upward with a speed of $v=(0.2t^2+2)$ m/s, where t is in seconds. [20%]



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