

科目：工程力學

適用：土木系三

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

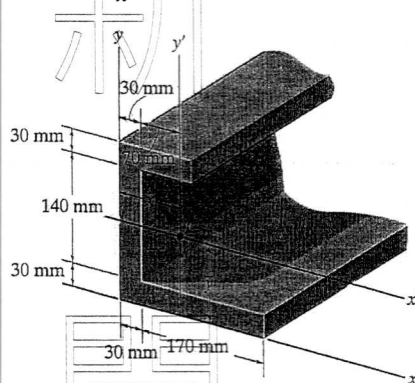
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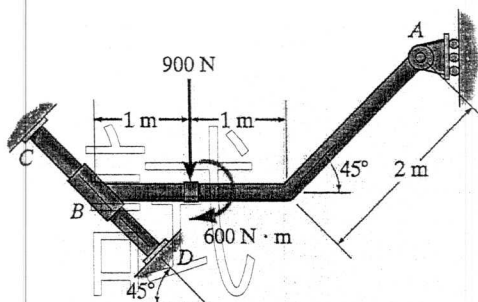
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(1) For the cross section as shown below, determine:

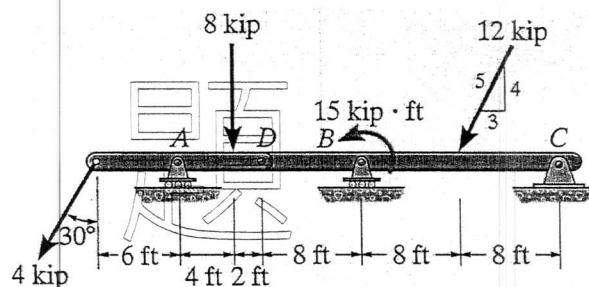
- (a) the centroidal \bar{y} of the cross-sectional area, (10%)
- (b) the moment of inertia $I_{x'}$ about the x' centroidal axis. (10%)



(2) Determine the support reactions of roller A and the smooth collar B on the rod. The collar is fixed to the rod AB , but is allowed to slide along rod CD . (20%)



(3) Determine the components of reaction at the supports A , B and C where A and B are rollers and C is a hinge. There is a hinge (pin) at D . (20%).



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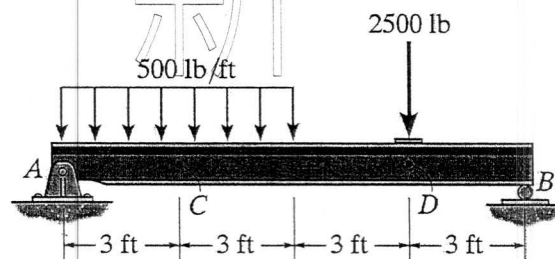
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- (4) Determine the internal normal force, shear force, and moment at points C and D in the simply-supported beam. Point D is located just to the left of the 2500-lb force. (20%)



- (5) Determine the ratio of a/b for which the shear force will be zero at the midpoint C of the beam. (20%)

