淡江大學96學年度轉學生招生考試試題

48

系別：航空太空工程學系三年級　　科目：工程力學(含靜力學、動力學)

可否使用計算機			
可	V	否	

本試題共 1 頁

1. Determine the force in **member *GC*** of the truss as shown in *Figure* 1, and state if this member is in tension or compression. (20%)

2. **Determine** $\bar{y}$, which locates the centroidal axis x' for the cross-sectional area of the T-beam as shown in *Figure* 2, **and then find** the moments of inertia $\bar{I}_{x'C}$, and $\bar{I}_{y'C}$. (30%)

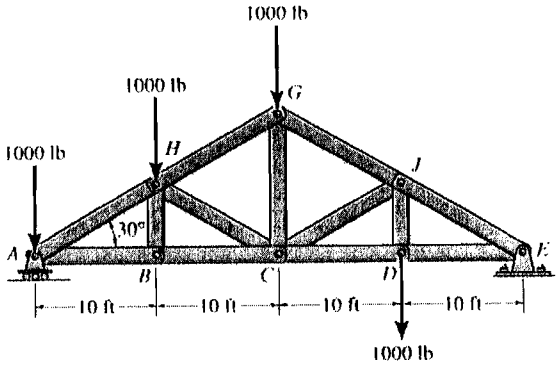

Figure 1.

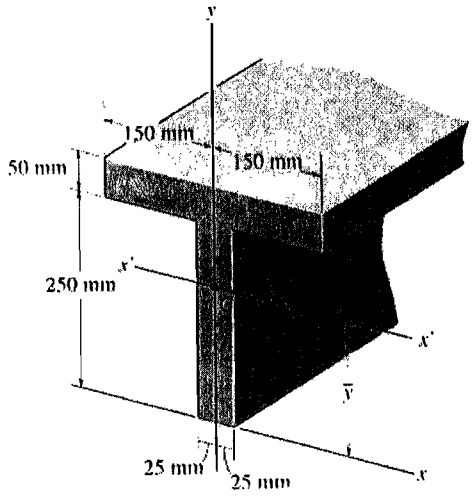

Figure 2.

3. The 50-kg crate shown in *Figure* 3 rests on a horizontal plane for which the coefficient of kinetic friction is $\mu_k = 0.3$. If the crate is subjected to a 400-*N* towing force as shown, determine the velocity of the crate in 3 *seconds* starting from rest. (20%)

4. If rod *CD* is rotating with an angular velocity $\omega_{DC} = 8$ rad./*sec*., determine the angular velocities of rods *AB* and *CB* at the instant shown in *Figure* 4. (30%)

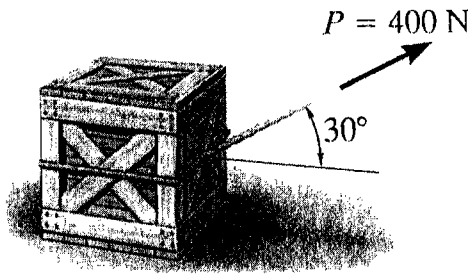

Figure 3.

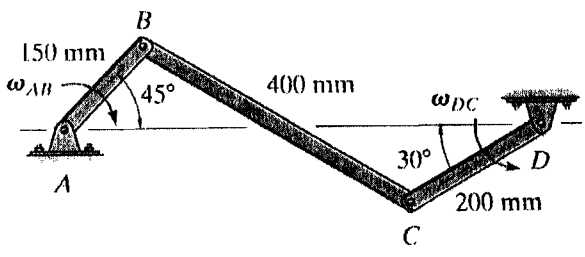

Figure 4.