

Grading Comments for TAM 202 HW # 3, Feb 13, 2001

a) Total pts = 10 pts

(2.97b (0.5), 2.98b (0.5), 2.95 (0.5) 3.1a (0.5), 3.2 (1)  
3.10 (1), 3.18 (1), 3.39 (1), 4.2 (1), 4.4 (2), 4.3 (1))

(b) Common Errors:

(1) # 2.98, Most students do not know  $\vec{r} = r \cos \theta \hat{i} + r \sin \theta \hat{j}$   
so that they cannot calculate C.M. from formula.

(2) # 3.1a, they did not read the problem carefully!  
FBD is the way to know what forces and moments to be  
balanced.

(3) # 3.18 point A is a roller, there is only a vertical  
reaction but no moment at A.

(4) # 3.39 Reaction at point C (or say  $\vec{F}_C$ ) is not necessary  
vertical! It could contain 3 components in x, y, z directions.

(5) # 4.2 show FBD! (Even when it is not required.)

(6) # 4.4 A correct FBD doesn't include F and point C,  
as shown in solution. In other words, one should know

$$\boxed{|T_{AC}| = |F|} \text{ and use it in FBD.}$$

(c) Things students should notice:

(1) A clear and clean FBD is extremely important!

(2) Please specify your coord system when you calculate C.M.  
(i.e. draw  $\hat{i} \rightarrow \hat{j}$  and show where is origin!)