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

(a) Total pts = 10 pts
(2.97 b (0.5), 2.98 b (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 \( \mathbf{r} = r \cos \theta \mathbf{\hat{i}} + r \sin \theta \mathbf{\hat{j}} \) 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 \( \mathbf{F}_c \)) is not necessary vertical! It could contains 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 \( |\mathbf{T}_{AC}| = |\mathbf{F}| \) 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 \( \mathbf{\hat{i}} \rightarrow \mathbf{\hat{i}} \) and show where is origin !)