[1]:

a). F.B.D (5 pts).
no unit (−1)

b). F.B.D (5 pts). ~ those who didn't have F.B.D for method of joints loose 4 pts.
no unit (−1)

c) AB. BE, BC, AE, EJ, HG. (1.67 for each)
Add a wrong bar (−2 for the 1st one, −1 for each of the rest)

[2]:

1) F.B.D (15 pts). those who make the Friction $\neq 0$, loose 5 pts

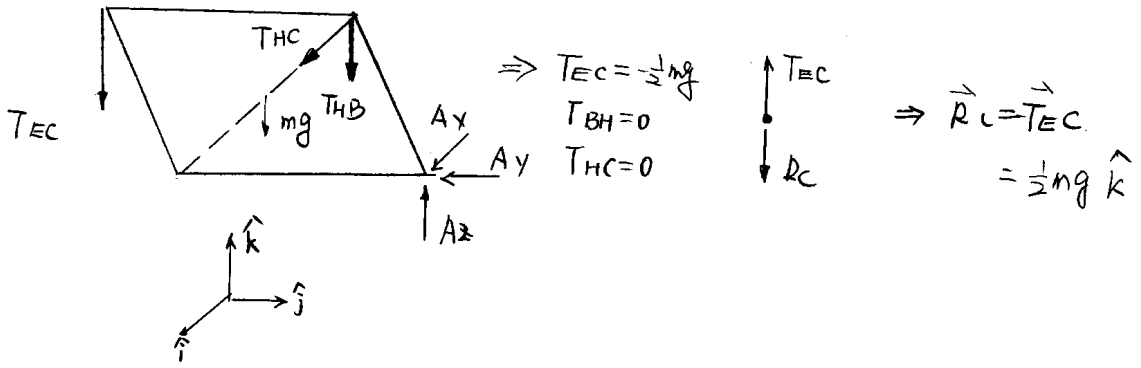
2). those who make $N_1 = N_2$, thus $F_1 = F_2 = \mu N$ loose 8 pts.

3) Those who have the wrong answer but have $\Sigma F_x = 0$, $\Sigma F_y = 0$, $\Sigma M = 0$, and reasonable derivation, loose 2 pts.

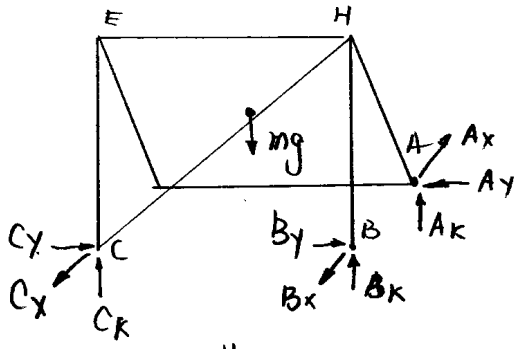
[3].

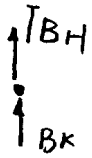
1). F.B.D. 15 pts (4 possibilities)

①



(2)





$\Downarrow$ $\qquad$ $\Downarrow$

$T_{EC} = -\frac{1}{2}mg$ $\qquad$ $T_{BH} = 0$

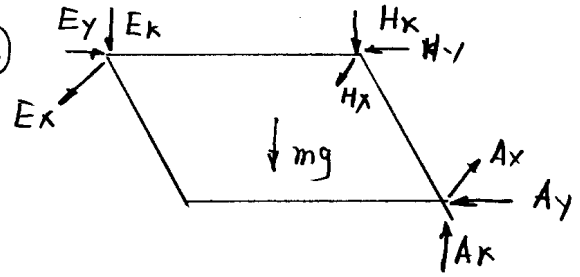
$T_{CH} = 0$

$\Downarrow$

$C_y = C_x = 0, \quad C_k = +\frac{1}{2}mg\,\hat{k}$

$B_y = B_x = 0, \quad B_k = 0$

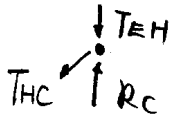
(3)



$\Rightarrow$ $H_x = 0$, $H_y = 0$, $H_k = 0$

$E_y = 0$, $E_x = 0$, $E_k = -\frac{1}{2}mg$

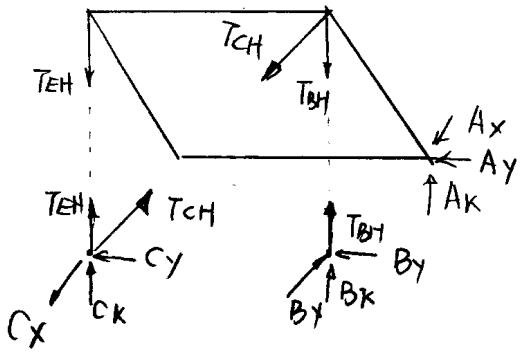
$\Rightarrow T_{EH} = -\frac{1}{2}mg$



$\Rightarrow R_C = \frac{1}{2}mg$, $T_{HC} = 0$

$\Rightarrow T_{HB} = 0$

(4).



or mg

: ~~Any~~ Forgot to add forces at A^V: loose 5 pts.

: Add wrong forces (external forces): loose 15 pts.

: Any F.B.D which's useful and right: get 5 pts.

: wrong F.B.D. with right answer: +5 pts for each force.
with wrong answer: 0.

: no. F.B.D: -15.

For all three:

any mistake in eqn: -2 for each eqn.

wrong answer with right eqn: -2 "