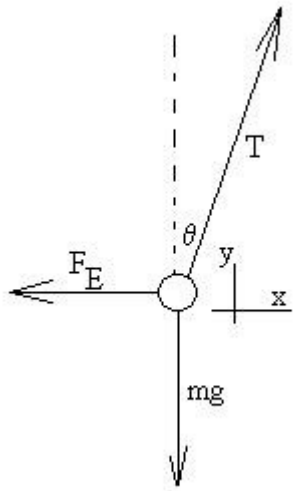
1-5)

This is very similar to the problem in the last set, but instead of the repulsive force being due to another point charge, it's instead due to the sheet.



The electric field from the sheet is given by $E_{SHEET} = \sigma/2\varepsilon_o$ and the corresponding electric force is then $F_E = qE = q\sigma/2\varepsilon_o$.

So, using NII and the fact that the acceleration is zero gives us:

$T\cos\theta - gm = 0$ $\quad F_E - T\sin\theta = 0$
$T\cos\theta = gm$ $\quad T\sin\theta = F_E$

Divide the equations to eliminate T:

$(T\sin\theta)/T\cos\theta) = \tan\theta = F_E/gm = q\sigma/\ 2gm\varepsilon_o$

So, $\theta = \arctan[q\sigma/\ 2gm\varepsilon_o]$