LAB #2 Static Eqm (PLO)

Show work fully: equation, numbers, calcs/steps, answer, round + units

Theory: $\sum \vec{F} = 0$

so $\sum F_x = F_{ex} + F_{bx} = 0$

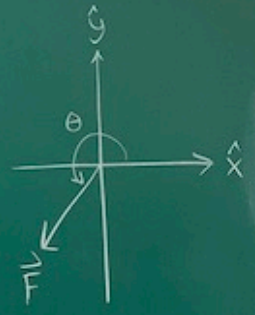
and $\sum F_y = F_{ey} + F_{by} + F_{gy} = 0$

$F_x = F\cos\theta$

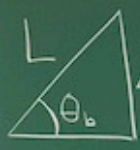
$F_y = F\sin\theta$

$F = \sqrt{F_x^2 + F_y^2}$

$\theta = \tan^{-1}\left(\frac{F_y}{F_x}\right)$

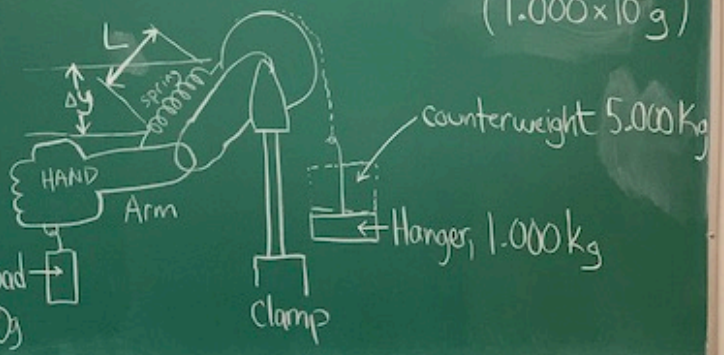


(Q3) Draw/label arm model (PLO)



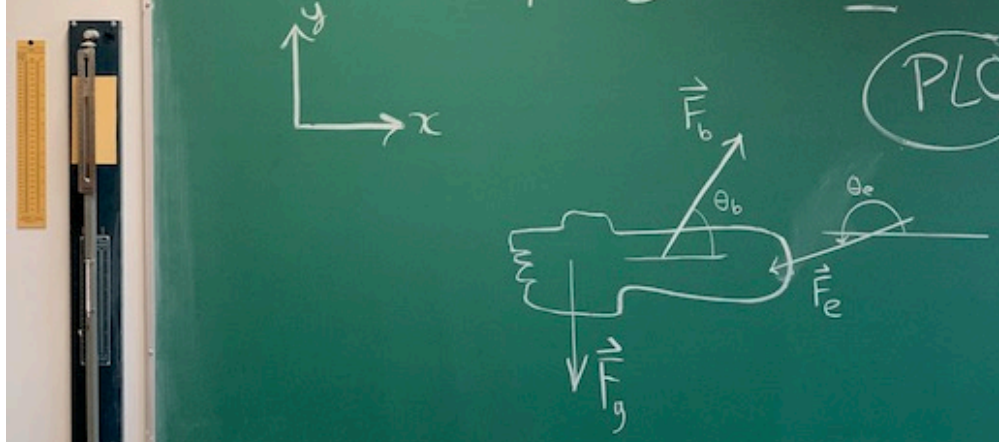
$\sin\theta_b = \frac{\Delta y}{L}$

* All masses with given values good to ±1g, eg 1 kg = 1000 g $(1.000 \times 10^3\ g)$



Free Body Diagrams: NO numbers!

PLO



Vector Polygon: use graph paper, ruler, protractor

PLO LABEL Fully, including scaling calcs

(eg) $\vec{F}_b = 30N @ 40^\circ$

$\vec{F}_g = 10N @ 270^\circ$

Measure $|\vec{F}_e|$, θ_e and compare to algebraic values!