Solutions to Practize Quiz 4. Phyzourc.

Problem 1. a

¿ F3 = 0 -Mg L + Tsinol=0'N - Teasor = 0 Tshorfs-Mg=0

Solve system of egess, for o

Tuso=N; Nys + Tsino - My = 0

Mg = T(cosoys + sino)

-T(cosoms +sho) + Tsno = 0 --115 + tano - tano = 0

teno = Us = D [0 = tan 2(0)].

Problem 1 B & Solve for X

EZ = 0 ; EX = 0

My L - Mgx + Finol-0 N-Tcoso = 0 N=Tcoso

Tsino + A Two = 2 Mg = 0

- 2 MgL - 4 Mgx + 4 Tsmol= 0

-2 Mg (L+2x) +4Tsmol=0

(Tsino+MsTcoso)(2x+L)+4Tsinol=0

-2x (Tsino Trestino)= L (Tsino thistorio) tutshot

X =- L + 2 TSMOL = 0.44m Fismo +Motions

Problem I @ Solve for Ms; X= 0.1 m X = - L + 2 sho L SMV +MCOSO $\left(\frac{X}{L} + \frac{1}{2}\right)$ (Sino this coso) = 2 sino Ms = Zsho (X +1) - sho = 0.63 Cos O The is good algebra practice. Problem 2. Compare O when it strokes and when it tips which one is less, 1 2 Fy = 0 2T=0 Fiz 0 mg sin (1-0) = 0 mg coso = N certo of mass 1 mgsho-fo=0 Cochoses pivot. mysind - Ms mg ceso=0 Note that $\propto = \left(\frac{1}{4}, -0\right)$ tono = Ms 0=tan (4) 0=430 413245 here itstides

Problem 3. 52=0 - M29 = + M19X = 0 X = M7 L = 0.76 m Problem 4 Solve for SI D -> Days A > Ahmed Intal So > Sebes Whial A0 = 2100+25D Ss > 11 fral in sceno 2 Sceno 1

An - 75 D = 900 $A_0 - 75 D = 900$

 $S_0 - 25D = 0$ D = -(900 - 2100)/50 = 24 $S_0 = 25(24) = 600$

 $A_0 - 25D = 2100$ $S_0 - 75D = S_1$ $|S_1 = 600 - 75 \times 24 = -1200|$