

5-3)

Apply NII to each mass.

m

c: $T = mac = mv_T^2/r$

Corresponds to x for the hanging mass M.

y: $+F_N - gm = ma_y = 0$

M

x: $gM - T = Ma_x = 0$

y: No Forces

Add the x eqs:

$$gM = mv_T^2/r$$

$$v_T = [Mgr/m]^{1/2}$$

