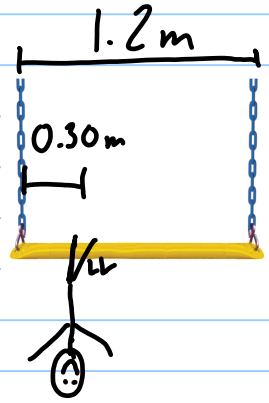
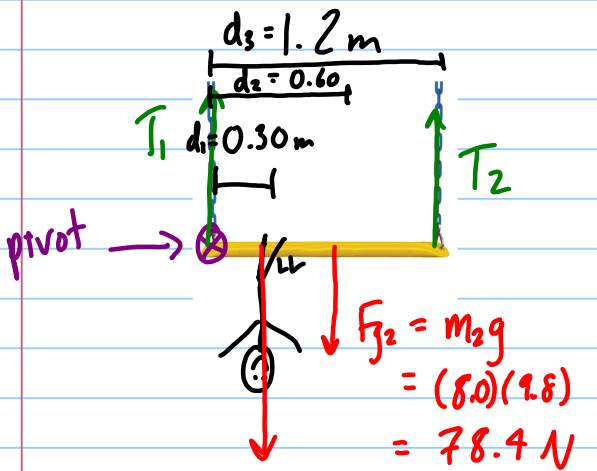
Quiz 2c

Note Title 14/11/2011

A 62 kg trapeze artist hangs from a bar as shown. The uniform bar is 1.2 m long and has a mass of 8.0 kg.

Determine the tension in both chains supporting the bar.





$$\tau_C = \tau_{CC} \checkmark$$

$$F_{g_1} d_1 + F_{g_2} d_2 = T_2 d_3 \checkmark$$

$$T_2 = \frac{F_{g_1} d_1 + F_{g_2} d_2}{d_3}$$

$$= \frac{(607.6)(0.30) + (78.4)(0.6)}{1.2}$$

$$\boxed{T_2 = 191\,N} \checkmark$$

$$\sum F_y = T_1 + T_2 - F_{g_1} - F_{g_2} = 0$$

$$T_1 = F_{g_1} + F_{g_2} - T_2 \checkmark$$

$$= 607.6 + 78.4 - 191.1$$

$$\boxed{T_1 = 495\,N} \checkmark$$