

Student name: \_\_\_\_\_

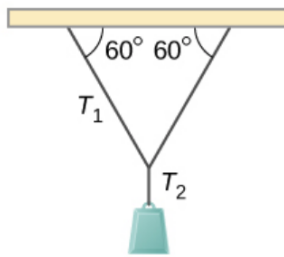
### 5-minute Quiz #12

Answer these two questions:

1. A 6.0m-long uniform seesaw is balanced at its center of mass, as seen below. The boy on the right is sitting at the edge of the seesaw and his weight is 20.0 kg. The other boy is sitting half-way the left side of the seesaw. What is the weight of the boy on the left? *[5 points]*



2. Find the magnitude of the tension in the three supporting cables shown below. The weight of the suspended body is 173.2 N and the masses of the cables are negligible. *[5 points]*



# Key Equations

First Equilibrium Condition	$\sum_k \vec{F}_k = \vec{0}$
Second Equilibrium Condition	$\sum_k \vec{\tau}_k = \vec{0}$
Torque vector	$\vec{\tau} = \vec{r} \times \vec{F}$
Magnitude of torque	$ \vec{\tau}  = r_{\perp} F$

Total torque	$\tau_{\text{net}} = \sum_i  \tau_i $
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