

Quiz 1a

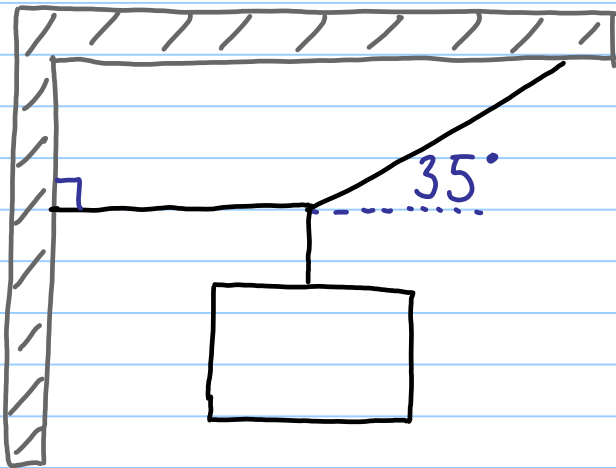
Note Title

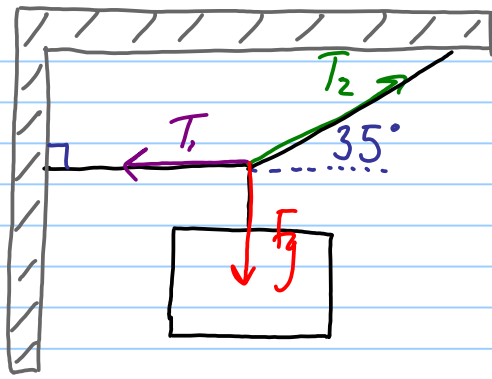
31/10/2011

A 6.0 kg sign hangs from two ropes as shown.

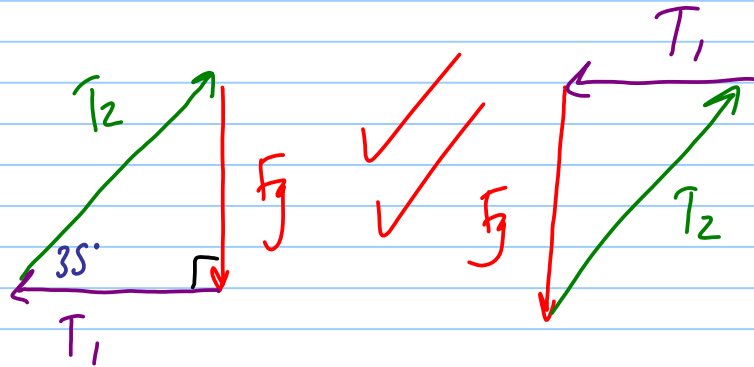
a) Draw a closed vector diagram of the forces at work.

b) What are the tensions in both ropes?





a.)



b.)

$$F_g = mg = 58.8 \text{ N} \checkmark$$

$$\sin 35^\circ = \frac{F_g}{T_2}$$

$$T_2 = \frac{F_g}{\sin 35^\circ} = 103 \text{ N} \checkmark$$

$$\tan 35^\circ = \frac{F_g}{T_1}$$

$$T_1 = \frac{F_g}{\tan 35^\circ} = 87 \text{ N} \checkmark$$