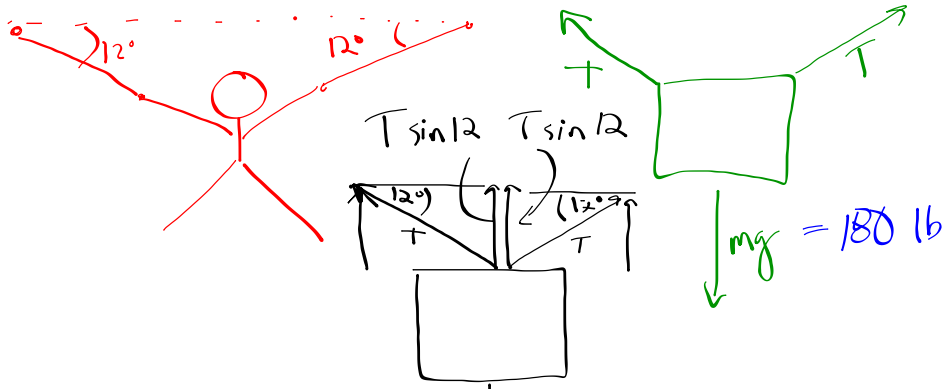
Retakes for 1st test must be completed by Wednesday, Nov. 6th

- Monday @ lunch or after school
- Wednesday @ lunch
- Off-block
- By appointment

(add up to ½ the points you missed)

- Proficiency Proposal(s) for the Kinematics need to be submitted by Tues., Nov 5th and completed by Tues. Nov 12th
- Proposal:
  - → What you're going to address (what are your weaknesses?)
  - → What you will do for your "lab" (make a prediction, test it with what we've learned, analyze any errors)
  - → How you'll convince me that you know what you're doing
  - → How many points do you think you should get? (I reserve the right to overrule you.)

While walking a tightrope, Harry had some good luck and some bad luck. The good luck was that just as the rope broke, he grabbed the broken ends. The bad luck was that the rope only makes an angle of 12.00° with the horizontal. What force must Harry's arm supply to keep his 180.0 pound (what is this in kg?) body from disaster? [1926 N]



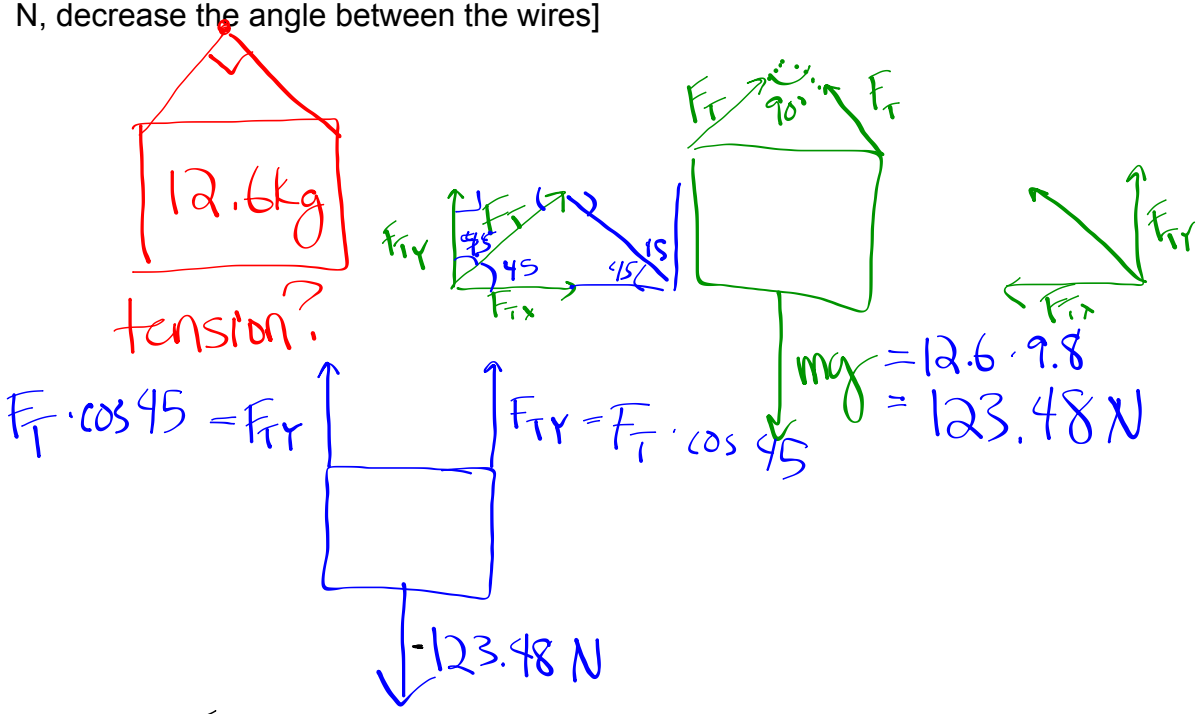
$\Sigma F_y = T\sin 12 + T\sin 12 - 180 = 0$

$2(T\sin 12) = 180$

$T = \frac{180}{2\cdot\sin 12} = 432.9 \text{ lb}$

$432.9 \text{ lb} \cdot \frac{4.45 \text{ N}}{\text{lb}} = 1926.3 \text{ N}$

A painting hangs from a single wire that is hanging from a nail on the wall. The wire holding the picture up makes an angle of 90.0° at the nail (not usually the case – it is usually higher). If the painting has a mass of 12.6 kg, what is the tension in the wire? What could be done to reduce the tension in the wire? [87.3 N, decrease the angle between the wires]



$$\Sigma_Y = F_T \cdot \cos 45 + F_T \cdot \cos 45 - 123.48 = 0$$

$$= 2(F_T \cdot \cos 45) - 123.48 = 0$$

$$F_T = \frac{123.48}{2 \cdot \cos 45} = 87.31\,N$$