4.) A **490 N** person stands on a metric scale in an elevator. a.) What does the scale read when the elevator is at rest? _____

b.) The elevator starts to ascend and accelerates upward at **2.0 m/s$^2$**.
What does the scale read now? Thoroughly explain your answer using all three of Newton's Laws?

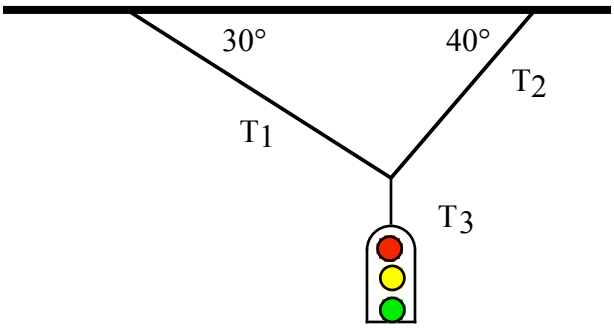
c.) When the elevator reaches its proper speed it no longer accelerates.
What is the reading on the scale as the elevator rises uniformly? Why is this?

d.) The elevator begins to slow down as it reaches the proper floor. Do the scale readings increase or decrease? Why?

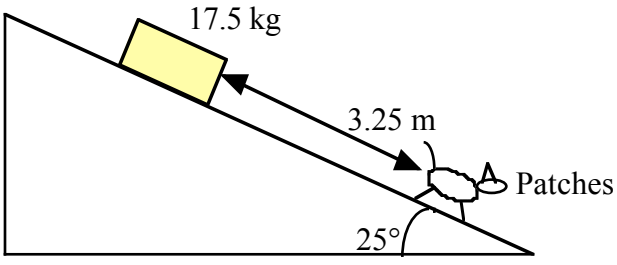
e.) If the cable snapped and the elevator fell freely, what would the scale read?
What happened to the gravity?

5.) A traffic light weighing **200. N** hangs from a cable tied to two other cables fastened to a support, as in the figure to the right.

Find the tension in each of the three cables.




6.) How long will it take the **17.5 kg** box to slide **3.25 m** down the rough surface and slam into Patches if it starts from rest and the frictional force between the box and the rough surface is **12.2 N**?

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Answers: 1) 1.21 m/s$^2$ @ 61° N of W 2a) 21.6m/s$^2$ @ 46.9° ARH 2b) 1665m 3) 11m/s 4) IC 5) IC 6) 1.37s