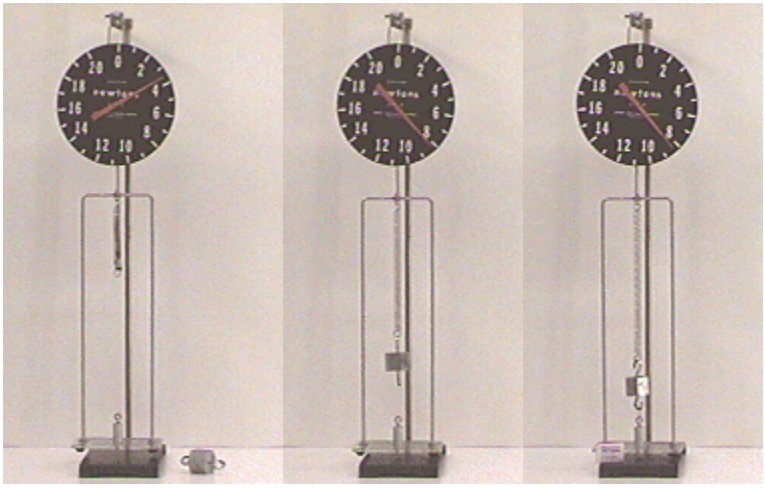
Question #35

A rectangular frame with a spring hanging from its top segment weighs about 3.5 Newtons, as seen from the reading of the spring scale in the photograph at the left below. If you hang a 500 gram mass on the spring, how much will the scale read? Right! The mass weighs about 5 Newtons, so the scale will read about 8.5 Newtons, as seen in the center picture. Now if you extend the spring so that a small string loop can be connected between hooks on the bottom of the weight and the platform at the bottom of the frame, what will the spring scale read? Right! Its weight does not change, so the spring scale continues to read about 8.5 Newtons. All right, it's not perfect, but it is close enough for this demonstration.



Now suppose that you burn the string, so the mass is free from the constraint holding it to the bottom of the frame. What will the spring scale do instantaneously when the string releases?

The spring scale will:

- (a) move to a higher value.
- (b) move to a lower value.
- (c) remain at the same value.

Click here for Answer #35 after October 23, 2000.

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For questions and comments regarding the *Question of the Week* contact

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