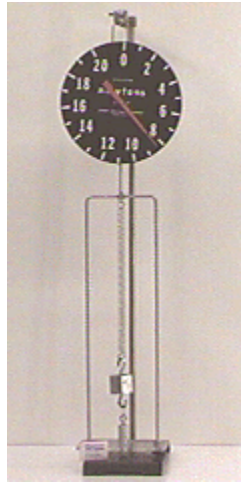


## Answer #35

The answer is (a): the spring scale will move to a higher value immediately when the string releases.



One way to view this solution is that when the string releases the spring exerts a force on the mass to accelerate it upward. The reaction force on the spring passes through the spring and is exerted on the frame, making the downward force on the spring scale greater.

A better way to view this solution is to look at the forces exerted by the string before it is burned. The string pulls downward on the weight and upward on the bottom of the frame with equal but opposite forces. When the string releases, the upward force vanishes, but the downward force remains, because the spring is still extended as it was before the string broke. Therefore, the spring scale feels an immediate additional force downward, and moves instantaneously to a higher value.

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