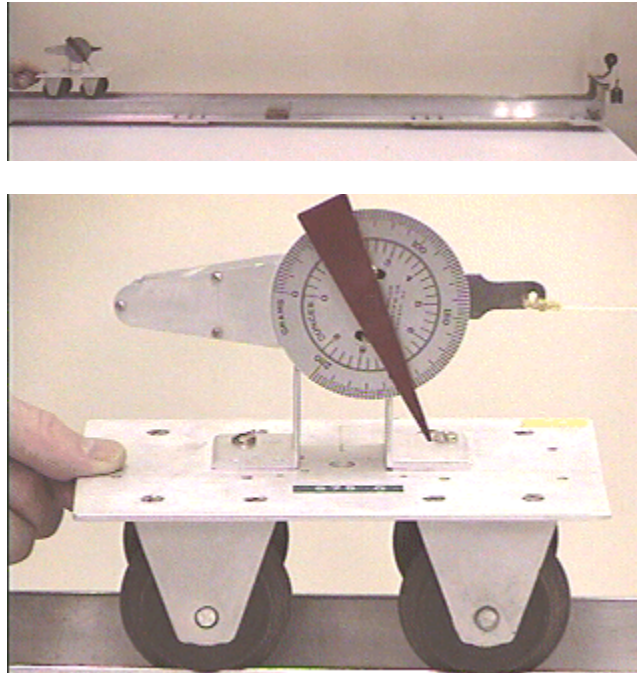


## Question #122

The setup photographed below, known as a *horizontal Atwood machine*, consists of a heavy cart connected by a string passing over a pulley to a lighter mass. In this case the mass of the cart  $M = 875$  grams and the mass hanging on the end of the string  $m = 200$  grams. When the system is held in place the spring scale indicates that the force (in grams) pulling on the cart is equal to the mass  $m$  hanging on the string, as seen in the lower photograph.



The question this week is what the scale will read when the system is released and accelerates left to right across your computer screen. Assume that because this is physics the pulley is frictionless.

After the system is released and begins to move the spring scale will read:

- (a) 0 grams.
- (b) greater than 0 but less than 200.
- (c) 200 grams.
- (d) greater than 200 grams.

You get a gold star in the middle of your forehead for actually calculating the correct value of the tension in the string after the cart is released.

Click here for [Answer #122](#) after September 30, 2002.

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For questions and comments regarding the *Question of the Week* contact [Dr. Richard E. Berg](#) by e-mail or using phone number or regular mail address given on the [Lecture-Demonstration Home Page](#).