Claim, Evidence, and Reasoning

Questions #1 - 3: A lab is performed to determine whether or not a car driving along Main Street is speeding. The Conclusion includes a Claim, Evidence, and Reasoning.

1. Which is an appropriate **Claim** for such a lab?
   a. We analyzed the car's motion, plotted it on the computer and determined its speed.
   b. The car we analyzed was speeding.
   c. We determined that the speed of the car was 49 mi/hr.
   d. This was a great lab! We had a lot of fun finding the speed of the car. We should do more of these.

2. Which is an appropriate statement of the **Evidence** for such a lab?
   a. The car was speeding.
   b. We calculated the slope of the line. We might have made an error in the calculation but it was 49 mi/hr.
   c. Anna and Noah are great partners. They know what they're doing and led the whole group towards a successful conclusion.
   d. The position-time plot of the car's motion is shown in the Data section. The slope of the line was found to be 49 mi/hr. This is 4 mi/hr over the speed limit.

3. Which is an appropriate statement of the **Reasoning** for such a lab?
   a. Speed limit signs are always clearly posted on the roadside.
   b. Some cars go faster than other cars. The car we analyzed was speeding.
   c. The slope of the line on a position-time plot is equal to the speed of the object.

Questions #4 - 6: A lab is performed to determine the relationship between the mass of an object and its weight. The Conclusion includes a Claim, Evidence, and Reasoning.

4. Which is an appropriate **Claim** for such a lab?
   a. I learned that weight depends on mass.
   b. The weight in Newtons is 10 times larger than the mass in kilograms.
   c. We learned so much doing this lab. It is a great lab and taught me a lot.
   b. Weight is a concept that many people don't understand. It is actually the force of gravity that acts upon an object.

5. Which is an appropriate statement of the **Evidence** for such a lab?
   a. It is clear from the textbook and the internet that Weight = mass • g.
   b. We put different masses on a force probe and measured the weight of each.
   c. We collected and plotted data of weight vs. mass. The slope of the line was 10.1 N/kg.
   d. There was a lot of error in our lab but when we averaged it, the results turned out well.

6. Which is an appropriate statement of the **Reasoning** for such a lab?
   a. Every time we changed the mass, we noticed a change in the weight.
   b. An object will weight differently on the moon than it does on the earth.
   c. Not every object has the same mass. That was a crystal-clear outcome of our data.
   d. The weight vs. mass plot shows the effect that changes in mass have upon the weight. The slope indicates that 10.1 N of weight for every 1.0 kg of mass in an object.