Lab Quiz #1

1. You want to decrease your time you run a 5K, so you decide to drink a protein shake before you run your next race to see if you can run the race faster. Identify the following variables for this experiment:
2. Independent variable?
3. Dependent variable?
4. You just ran a 5K (5 kilometers) in 26 minutes. How many minutes did you run each mile if you ran at the same pace the whole race?

1 mile = 1609 meters

1. You would like to make sure that there are complex carbohydrates in the protein shake (but you through away the package the shake came in) and took the shake back to Biology Lab. (a) List steps you would take to test this and (b) what result are you looking for?
2. You suspect that this shake also has a high amount of sugar and will put way too much solute in your bloodstream. What will happen to the water within the cells in his bloodstream? Explain why?
3. You find out that your 5K race time decreases with the consumption of the shake. One ingredient that you put into the shake to dissolve the powder is milk. You have a friend that is lactose intolerant so you decide to purchase lactose-free milk to make him a shake.

To make this milk, lactase is added to it.

* 1. What temperature do you think they have to use to make this milk? Explain why.
  2. Explain why cell respiration is more efficient in producing energy.