

Name \_\_\_\_\_

*Print out and use this as a cover sheet for your hand-written answers.*

1. Choose a **non-scientific** theory you are familiar with (e.g. Surrealism, Westerns, Capitalism, <sup>官官</sup>話話, etc.) and, for **each** of the four features of a scientific theory given in the textbook (bottom page 8), briefly discuss the extent to which your choice does or does not follow them. (Discuss mean *discuss*, not just YES/NO.)  
[Scientific Discovery]
2. Give examples from your daily experience to explain why constant *velocity* is something one experiences by seeing and not physical feeling, whereas *acceleration* can be experienced by physical feeling alone.  
[2.1 Space, Time, Motion]
3. Suppose you are traveling by public transport and cannot hear or see anything outside the vehicle. Ignoring effects of gravity, describe a simple experiment or observation inside the vehicle that you could use to *visually* demonstrate to the other passengers that
  - a) the vehicle is an inertial frame of reference
  - b) the vehicle is a non-inertial frame of reference.In other words, describe what the passengers would see in each case.  
[2.1 Space, Time, Motion]