

Name: _____

Date: _____



Cornell University
Prison Education Program

Conceptual Physics Reading Quiz 3

Due Date: Feb. 23 (before class)

This reading assignment covers the material that we will discuss and work on next week. Our class activities will **assume** that you have read the assigned material, therefore it is **very important** that you do so to get the most out of the class!

1. *Light and Matter*, Chapter 2 (Section 3)

In this section, pay special attention to how velocity relates to position and time. In particular, it is important to be able to read a graph: What does the line represent? If I have a position versus time graph, how do I find an object position at 1 second? At 2 seconds? How do I find the time at which an object has moved by 1 m? Graphs can take on different shapes. They can be straight or curvy lines, and they can be pointed up or pointed down. What do the different shapes mean?

2. *College Physics*, Chapter 2 (Section 8)

This section is particularly mathy - it's OK if you don't know what all the equations mean.

This section is particularly interesting because it relates how *acceleration* connects to velocity versus time graphs, and how it effects position versus time graphs.

As part of the reading, please complete the pre-class quiz *before* coming to class. They will be collected at the very beginning.

Questions from *Light and Matter* Chapter 2

1. (1 point) In graphical terms, an object's velocity is interpreted as what part of a position versus time graph?

2. (2 points) In graphical terms, a positive slope characterizes what kind of line? What does a negative slope characterize?

3. (1 point) For a position versus time graph with a curvy line, the velocity at any given moment is found using what? (Hint: look at figures and their captions)

4. (2 points) The standard convention for graphing has x on which axis (horizontal or upright)? What about t (horizontal or upright)?

Questions from *College Physics* Chapter 2

1. (1 point) The slope of a position versus time graph is determined how? (See equation 2.92)

2. (1 point) If an object is accelerating at a constant rate ($a \neq 0$) is the position versus time graph straight or curvy?

3. (1 point) The slope of a velocity versus time graph represents what physical quantity (displacement, velocity, or acceleration)?

4. (1 point) If an object's acceleration is changing, is the velocity versus time graph straight or curvy?
