

0.3 Pre-Lab 3: Observations of Motion

Name _____ Section _____ Date _____

Reading: Hobson Ch.3: section 3.4 & section 3.5

Galileo found that gravity causes constant acceleration along an incline. Assuming an object starts from rest:

- The relationship between distance (s), acceleration (a), and time (t) is: $\Delta s = \frac{1}{2}at^2$, where Δ refers to the fact that the distance measurement measures the difference between its position at the beginning and end of the experiment.
- The relationship between speed, acceleration and time is: $v = at$
- Keep in mind that A^2 (A squared) is A multiplied by A, not A multiplied by 2.

Question #:1

- A cart on a linear track has a uniform acceleration of $0.172m/s^2$. What is the velocity of the cart 4.00 s after it is released from rest?
- How far does this cart travel during these 4 s?
- From the first equation, give the expression of the acceleration a

In table 1 is a data set of time and distance traveled.

Question #:2

- Complete table 1
- find the average acceleration