

## AP Physics 1 Review Questions

### *Integrating Content, Inquiry and Reasoning*

- Galileo carried out his seminal free-fall experiment using an inclined plane. Why is such an approach feasible, and sometimes preferable to the simple drop method, for determining  $g$ ?
- Would “throwing” the picket fence up or down prior to its passing through the photogate affect the experimentally determined  $g$  value?
- A student performed a sphere drop experiment. The sphere was dropped from 1.50 m above the ground and the sphere has a mass of 0.875 kg. Free fall times for the student’s experiments are below.
  - Before the student calculates the acceleration due to gravity from the data, are there any trials that should be thrown out? Justify your choice.
  - Calculate the average acceleration due to gravity from the student’s data.

Free Fall Time (s)
0.553
0.700
0.557
0.552
0.555

- Which graph below represents how the velocity of the sphere changes over time when falling with constant acceleration? Justify your choice.

