

## Overview

The following are key observations and recurring themes from Section 1 of Practice Exam 2. The AP<sup>®</sup> Physics 1 score is not absolute; it is based on how you perform relative to everyone else. If an exam is harder, everyone's scores shift accordingly. Focus on learning the physics, not on worrying about the scoring scale.

## General Strategies

- **Apply physics to unfamiliar contexts:** The exam will present scenarios that are similar to, but not exactly the same as, what you have practiced. For example, a graph of work as a function of kinetic energy. Stay calm and apply what you know. (Q2)
- **Do not try to outthink the exam:** Do not look for patterns in answer choices. Six correct answers in a row being choice D means nothing. Just learn the physics. (Q15)
- **Easy problems are not traps:** Some problems have very simple solutions. Do not second-guess yourself. If the physics works out cleanly, trust it. (Q30)
- **Read carefully and read a lot:** Some questions are very long. The AP<sup>®</sup> Physics 1 exam is a reading exam as much as a physics exam. Practice reading long questions carefully. (Q36)

## Graphs and Figures

- **Check all axes:** When answer choices are graphs, the vertical axes may not all be the same quantity. A question prompt may show an acceleration vs. time graph while answer choices include both velocity vs. time and position vs. time graphs. Read every axis label. (Q6)
- **Scroll to see the full figure:** Depending on your screen resolution and zoom level, part of a figure may be cut off. If the problem statement says there are four objects but you only see three, scroll to find the rest. (Q16)

## Physics Content Reminders

- **Static friction at maximum angle:** At the maximum angle just before an object begins to slide, the force of static friction is at its maximum value. The coefficient of kinetic friction is irrelevant in this situation. (Q3)
- **Solution/reason format can vary:** The solution/reason answer choice format is not always solution first, then reason. The reason may appear before the solution. Read each answer choice fully before deciding. (Q5)
- **Include all parts of the system:** If a problem gives you the mass of a rod, the rod is part of the system. Do not assume it is thin and massless unless the problem says so. Include it when calculating center of mass or rotational inertia. (Q14)

- **Angles with respect to the vertical:** Cosine does not always give the x-component of a force. That is only true when the angle is measured from the horizontal. When the angle is measured from the vertical, sine gives the x-component and cosine gives the y-component. When in doubt, draw the vector component triangle. (Q15)
- **Include atmospheric pressure in fluid problems:** When finding pressure at a depth in a liquid open to the atmosphere, include atmospheric pressure at the surface. The value of atmospheric pressure is available in the reference table in the testing app. (Q23)
- **Radian mode for simple harmonic motion:** The position, velocity, and acceleration equations for simple harmonic motion require your calculator to be in radian mode. The calculator in the Bluebook app defaults to degree mode; switch it to radians before calculating, then switch it back afterward. (Q27)