AP® Physics C: Mechanics
2002 Scoring Commentary

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Question 1

Sample 1 (Score 15)

In part (b), this student's use of the integral earns the point for knowing velocity is the time derivative of position. The rest of the solution is straightforward.

Sample 2 (Score 12)

This student earns no credit for part (b), but the other responses are correct.

Question 2

Sample 1 (Score 15)

In part (e), this student uses conservation of momentum for the inelastic collision to explain a smaller velocity after the collision.

Sample 2 (Score 15)

This student explicitly explains the energy considerations relating to the compression of the spring.

Question 3

Sample 1 (Score 15)

This is an excellent paper, with a clear and complete description of the experimental setup and measurement.

Sample 2 (Score 13)

This student loses 1 point in part (a) because the graph goes below 0.5 J at $x = 5$ m. Another point is lost in part (e) because the student did not explicitly explain how measuring the spring compression would allow determination of the glider's speed.