



PA CENTRAL REGIONAL SCIENCE OLYMPIAD  
PHYSICS LAB C DIVISION

ANSWER KEY

SECTION 1

/2 1. 0.165 m

/2 2. 9.80 N

/2 3. 0.810 m

/2 4. 1.54 s

/2 5. 1.62 J

/2 6. 0.00500 m

/2 7. 0.0438 J

/2 8. 0.490 m/s<sup>2</sup>

/2 9. 35.0 N/m

/2 10. 33.3 N/m

SECTION 2

/2 1. 2.00 m

/2 2. 0.811 m

/2 3. 0.857 m/s up

/2 4. 0.300 J

/2 5. 0.291 J

/2 6. 0.283 N s up

/2 7. 0.245 N down

/2 8. 5.71 N up

/2 9. 0.172 J

/2 10. 0.806

SECTION 3

/2 1. 0.322 N

/2 2. 0.300 N

/2 3. 1.12 N

/2 4. 0.225 J

/2 5. 0.888 J

/2 6. 0.898 m/s

/2 7. 0.175 kg m/s

/2 8. 0.670 s

/2 9. 1.67 N

/2 10. 1.69 m/s<sup>2</sup>

SECTION 4

/2 1. 1.50 m

/2 2. -1.85 m/s

/2 3. d = 0.890 m

/2 4. t = 0.348 s

/2 5. -0.583 m/s

/2 6. -5.39 m/s<sup>2</sup>

/2 7. 0.0550

/2 8. 0 J (perfectly elastic)

/2 9. 1.70 m

/2 10. 1.43

BONUS  
NEWTON!

SCHOOL CODE

SCHOOL NAME