

Contemporary Physics I – HW 9

HW 9

Due December 7, 2007

Please answer all questions clearly and concisely. While you need not transcribe the question completely, it should be clear from your answer alone what you are talking about.

You are strongly encouraged to discuss the homework with your classmates, but you must complete the written homework by yourself, and of course, the material you submit must be your own.

Remember, show all of your work!

1. 8.P.20
2. 8.P.22
3. 8.P.24
4. 8.P.26
5. 9.P.20
6. A sphere of mass, 4 kg is at rest on a table. A second sphere, of mass 2 kg strikes the first sphere (elastically!) with an initial velocity of $\vec{v}_{2,i} = 5 \text{ m/s } \hat{i}$. After the collision, the second sphere is moving at an angle 10 degrees from the horizontal. What are the velocities of the two spheres after the collision?