

PHYSICS 5A – HOMEWORK SET 6

Due Wednesday, 10/30/01. Ten points per problem. Answers to the odd-numbered exercises are in the back of the book.

Reading: Young and Freedman Chapter 7, sections 7.3 - 7.6, Chapter 8

- 1.) Problem 7.21
- 2.) Problem 7.31
- 3.) Problem 7.40; you need not draw the acceleration vectors. [Answer: a) $h > (5/2)R$; b) 31.3 m/s, 49.0 m/s², 9.8 m/s²]
- 4.) Problem 7.51
- 5.) Problem 7.58 [Answer: a) 6.14 m/s; b) 0.0210 m]
- 6.) Problem 8.9
- 7.) Problem 8.27
- 8.) Problem 8.30 [Answer: car – 19.5 m/s; truck – 21.9 m/s]
- 9.) Problem 8.40 [Answer: a) 24.0 m from rear car; b) 5.02×10^4 kg-m/s; c) 16.8 m/s; d) Same as b)]
- 10.) Problem 8.63
- 11.) Problem 8.69
- 12.) Problem 8.82 [Answer: 1.29 m]
- 13.) Problem 8.86 [One answer: a) $v_{cm} = v_{A1} * [m_A / (m_A + m_B)]$]