Problem Assignments for Unit 1

Unless otherwise indicated, problems are from Wolfson. "**Supp**" refers to chapters in the supplementary reading and "A22" refers to the additional problems that are at the beginning of the supplementary reading.

Assigned Problems for Wednesday, August 27

A1, A5, A6; **CH 2:** 6, 19, 101, 102

Answers: CH 2 #101: answer should be choice c – which corresponds to point D on the graph. **CH 2 #102**: answer is b which corresponds to point E on graph.

Assigned Problems for Friday, August 29

A8(a), A91, A92; **CH 3:** 3, 4, 10, 13, 15, 21, 27

Notes: For **CH 3 #13**, delete the word "graphically".

Answers: CH 3 #21: the answer should be "in the i-hat direction."

Hand-In Set #1 Due Monday, September 1, 4:30 pm

A2, A4, A9, A10, A90; **CH 2:** 18abc, 52; **CH 3:** 16, 52, 60;

Assigned Problems for Wednesday, September 3

A12; **CH 4:** 4, 7, 9, 12, 15, 35, 51, 55

Answers: CH 4 #12: (a) 1.29 $\mathrm{m/s^2}$; (b) 0.013 $\mathrm{m/s^2}$.

Assigned Problems for Friday, September 5

A15, A16, A72; **CH 5:** 2, 12, 18a, 21, 23, 41, 49; **Supp CH 1:** 1

Notes: For **CH 5 #2**, use free-body diagrams and Newton's Second Law to justify your answer.

Answers: CH 5 #12: $(4.0\,\hat{\imath} + 1.7\,\hat{\jmath})\,\mathrm{N}$; **CH 5 #18a**: $m_{\mathrm{right}} = 7.1\,\mathrm{kg}$.

Hand-In Set #2 Due Monday, September 8, 4:30 pm

A11, A13, A14, A17; **CH 4:** 46, 58; **CH 5:** 40, 42, 50; **Supp CH 1:** 2;

Notes: For **CH 4 #58**, assume the two blocks have the same acceleration.

Assigned Problems for Wednesday, September 10

A73; **CH 6:** 4, 12, 19, 23, 29, 39, 65, 52 (#52 is optional)

Answers: CH 6 #12 490 J; **CH 6 #52** (a) all 1, (b) all 0

Assigned Problems for Friday, September 12

A19, A20, A21, A22, A23; **CH 7:** 4, 12, 19, 24 (a and c only), 25, 27

Answers: CH 7 #12 (a) 1.30×10^6 J, (b) -5.90×10^4 J; **CH 7 #24** (a) 4.9 m/s, (c) around $x = 11$ m.

Hand-In Set #3 Due Monday, September 15, 4:30 pm

A18 A24, A25, A78; **CH 6:** 20, 28, 38; **CH 7:** 16, 44;

Notes: For **A 18**, the average friction force, F_{avg}, is defined such that $|W_{\text{fric}}| = |F_{\text{avg}} L|$. For **CH 7 #44**, the provided force $F(x)$ is the force acting on the ligament, so the force produced by the ligament, $F_{\text{ligament}} = -F(x)$.