

# WORK, ENERGY, & MOMENTUM

## Chapter 6-7 Assignments and Answers

### ASSIGNMENTS:

#### Ch. 6 Problem Assignment Pt. 1:

HW due: \_\_\_\_\_

Work textbook pg. 162-166 #1, 3-5, 8, 12, 14, 17, 19, 20, 26-28, 31, 33-35, 38-41, 86a

#### Ch. 6 Problem Assignment Pt. 2:

HW due: \_\_\_\_\_

Work textbook pg. 164-165 #43-45, 48-50, 53-55, 58, 59, 64, 65, 74, 76, 77

#### Ch. 7 Problem Assignment:

HW due: \_\_\_\_\_

Work textbook pg. 188-193 Problems

#1-4, 6, 8, 10, 12, 14-17, 20, 22-24, 27a, 29, 32, 66, 71, 76, 79

### ANSWERS:

#### Ch. 6 Assignment Pt. 1:

1. 7272J

3.a. 920J

b. 5200J

4. 8075J

5. 490J

8.a. 376N

b. -1354J

c. -4112J

d. 5466J

12.a. 2800J

b. 2100J

14. 216J

17.  $-1.64 \times 10^{-18} \text{J}$ 

19. 44.2m/s

20. 288N

26. 34cm

27. 82.3J

28. 2509J

31.a. 916,300J

b. 916,300J

c. Yes, because...

33. 1.43m

34. 60.2m/s

35. 5.14m/s

38. 199m/s

39.a. 8.265m/s

b. 3.64m

40. 2.5r

41.  $E_{\text{total}} = \frac{1}{2}mv^2 + \frac{1}{2}kx^2 = \frac{1}{2}kx^2$ 86a.  $29.3^\circ$

**Ch. 6 Assignment Pt. 2:**

43. 26.2m/s, 11.7m/s, 19.8m/s  
44. a. 10.1m/s  
b. 2.18m  
45.  $k = \frac{12Mg}{h}$   
48. 691.8J  
49. a. 20.69m/s  
b. 242.7m  
50. a. 15.96m/s  
b. 1.06N  
53. 22.64m/s  
54. 0.308  
55. 0.40  
58. 28.2s  
59. 549.3N  
64.  $8.057E^6J$   
65. 476.9W  
74. 7.99m/s  
76. a. -48,616J  
b. 44,196J  
c. -235,053J  
77. a.  $\sqrt{2gL}$   
b.  $\sqrt{1.2gL}$

**Ch. 7 Assignment:**

1. 0.24kgm/s  
2. -7.7m/s  
3. 4398N  
4. -.901m/s  
6. 4.76m/s  
8. 13,950kg  
10. 7.94m/s  
12. 0.69m/s  
14. 139.9kg  
15. a. 2.025kgm/s  
b. 578.6N  
16. a. 102kgm/s  
b. 12,750N  
17. 2.12kgm/s to the left  
20. a. 1.25Ns (or 1.25kgm/s)  
b. 20.83m/s  
22. 1.10m/s east and 4.40m/s east  
23. 1.00m/s west and 2.00m/s east  
24. -3.0m/s and 2.0m/s  
27. a. 3.62m/s and 4.42m/s  
29. 0.346m and 1.386m  
32.  $\Delta y = 0.161m$  and  $\Delta x = 0.94m$   
66. 21m  
71. 375.1m/s  
76. a. 1.72m/s  
b. -0.343m/s and 1.372m/s  
c. 0.6cm and 9.6cm  
79. a. -4.38m/s and 4.02m/s  
b. 1.96m