Chapter 7 Even Answers

2. 1.59×10^3 J
4. (a) 79.4 N (b) 1.49 kJ (c) –1.49 kJ
6. (a) 329 J (b) 0 (c) 0 (d) –185 J (e) 144 J
8. 28.9
12. 16.0
14. 5.33 W
16. (a) graph is a straight line passing through points (2 m, 0 N) and (3 m, 8 N)
(b) -12.0 J
18. 50.0 J
20. (a) 575 N / m (b) 46.0 J
22. (a) 9.00 kJ (b) 11.7 kJ, larger by 29.6%
24. $3W$
26. kg/s^2
28. (a) 33.8 J (b) 135 J
30. (a) 2.00 m / s (b) 200 N
32. (a) 1.94 m / s (b) 3.35 m / s (c) 3.87 m / s
34. (a) 4.56 kJ (b) 6.34 kN (c) 422 km/s^2 (d) 6.34 kN
36. 0.116 m
38. (a) 4.10×10^{-18} J (b) 1.14×10^{-17} N (c) 1.25×10^{13} m/s^2 (d) 2.40×10^{-7} s
40. 1.25 m / s
42. ~ 10^4 W
44. 685 bundles
46. (a) 20.6 kJ (b) 686 W (0.919 hp)
48. \$46.2
50. 5.92 km / L
52. (a) 7.38×10^{-13} J (b) 94.5%
54. (a) 4.38×10^{11} J (b) 4.38×10^{11} J
56. 2.92 m / s
58. (a) $\cos\alpha = \frac{A_x}{A}$, $\cos\beta = \frac{A_y}{A}$, $\cos\gamma = \frac{A_z}{A}$
60. (a) $\frac{mgnhh_s}{v + nh_s}$ (b) $\frac{mgvh}{v + nh_s}$
62. 7.37 N / m
64. 57.7 W
66. (b) $2kL^2 + kA^2 - 2kL\sqrt{A^2 + L^2}$
68. (b) 125 N / m (c) 13.1 N
70. (a) –5.60 J (b) 0.152 (c) 2.28 rev
72. -1.37×10^{-21} J
76. (b) Consider the power input when a constant force F is used to push an object of weight w distance d across a rough horizontal floor, at constant speed, in time t. Then $b = \mu_k$.