

18.  $5.3 \times 10^4 \text{ N}$
19. No, the sack will rip.
20. a.  $1.2 \text{ m/s}^2$ ; b.  $-0.63 \text{ m/s}^2$ ; c. stopping, lower acceleration; d. scale reads less than 836 N, reads 836 N, then reads more than 836 N
21.  $0.68 \text{ m/s}^2$
22. a.  $4.9 \times 10^2$ ; b. 150 N, static friction; c. 49 N, sliding friction; d.  $2.0 \times 10^2 \text{ N}$
23. a. 10 N; b. 0.20
24.  $1.5 \text{ m/s}^2$
25.  $4.8 \text{ m/s}^2$
26. a.  $9.8 \text{ m/s}^2$ , up; b. 98 m/s, up; c. -49 N, down; d.  $1.0 \times 10 \text{ s}$
27. a. Refer to Problems and Solutions Manual for Diagram. b. upward; c.  $2.0 \text{ m/s}^2$
28. a.  $5.88 \text{ m/s}^2$ ; b. 15.7 N
29. a.  $3.27 \text{ m/s}^2$ ; b. 26.1 N

## Answers To PROBLEMS

Complete solutions for all Chapter Review Problems can be found in the Problems and Solutions Manual accompanying this text.

1. a.  $45 \text{ m/s}^2$ ; b.  $3.9 \times 10^4 \text{ N}$ ; c.  $3.1 \times 10^3 \text{ N}$ ; d. inertial mass
2.  $33.02 \text{ m/s}^2$ ; 163.0 m/s
3. No, the acceleration during the first half-second was  $45 \text{ m/s}^2$  (problem 1) and the acceleration for the full time was  $33.02 \text{ m/s}^2$  (problem 2).
4.  $-5 \times 10^3 \text{ N}$ , upward
5.  $3.1 \times 10^3 \text{ N}$
6.  $6.3 \times 10^3 \text{ N}$
7. 33 m
8. a. 14 m/s; b.  $3.2 \times 10^3 \text{ N}$
9.  $6.6 \times 10^{-25} \text{ m/s}^2$
10.  $-2.0 \text{ m/s}^2$
11. a. 95.0 kg; b. 929 N; c. 95.0 kg; d. 934 N; e. "mass-in"
12. 250 kg
13.  $10.5 \text{ m/s}^2$ , down
14.  $-1.13 \times 10^4 \text{ N}$ , opposite direction of motion
15. 0.255
16. 0.400
17.  $-1 \text{ m/s}^2$