Chapter 3 Even Answers

2. (a) 8.60 m (b) 4.47 m, -63.4°, 4.24 m, 135°
4. (a) (2.17, 1.25) m and (–1.90, 3.29) m (b) 4.55 m
6. (a) r, $180^\circ - \theta$ (b) $2r$, $180^\circ + \theta$ (c) $3r$, $-\theta$
8. 14 km, 65° N of E
10. 310 km at 57° S of W
12. 9.54 N, 57.0° above the x-axis
14. 7.92 m at 4.34° N of W
16. (a) ~10^5 m upward (b) ~10^3 m upward
18. 5.24 km at 25.9° N of W
20. 86.6 m, - 50.0 m
22. 358 m at 2.00° S of E
24. $|\mathbf{B}| = 7.81$, $\alpha = 59.2^\circ$, $\beta = 39.8^\circ$, $\gamma = 67.4^\circ$
26. 788 miles at 48.0° NE of Dallas
28. (b) 5.00**i** + 4.00**j**, 6.40 at 38.7°, –1.00**i** + 8.00**j**, 8.06 at 97.2°
30. $C_x = 7.30$ cm, $C_y = -7.20$ cm
32. 6.22 blocks at 110° counterclockwise from east
34. (a) 4.47 m at $\theta = 63.4^\circ$ (b) 8.49 m at $\theta = 135^\circ$
36. 42.7 yards
38. 4.64 m at 78.6° N of E
40. 1.43×10^4 m at 32.2° above the horizontal
42. 106°
44. - 220**i** + 57.6**j**, 227 paces at 165°
46. (a) (3.12**i** + 5.02**j** – 2.20**k**) km (b) 6.31 km
48. (a) (15.1**i** + 7.72**j**) cm (b) (–7.72**i** + 15.1**j**) cm (c) (+7.72**i** + 15.1**j**) cm
50. (a) 74.6° N of E (b) 470 km
52. $a = 5.00$, b = 7.00
54. $2 \tan^{-1}(1/n)$
56. (3.60**i** + 7.00**j**) N, 7.87 N at 97.8°counterclockwise from horizontal
58. –2.00 m / s **j**, it is the velocity vector
60. (a) (10.0 m, 16.0 m)