

Answers for Lesson 8-6, pp. 455–459 Exercises

1. $\langle 602.2, 668.8 \rangle$

2. $\langle -307.3, -54.2 \rangle$

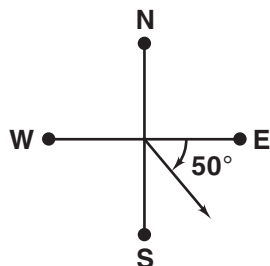
3. $\langle 37.5, -65.0 \rangle$

4. 15° south of west

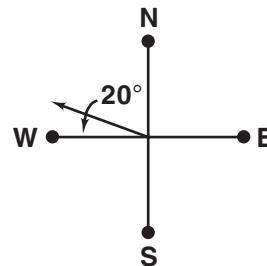
5. 20° west of south

6. 40° east of south

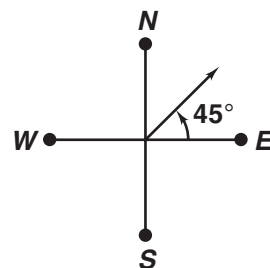
7.



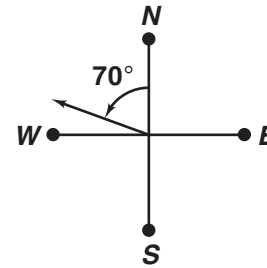
8.



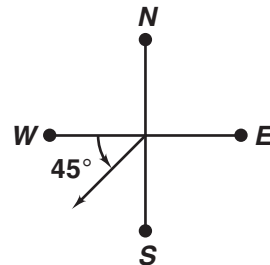
9.



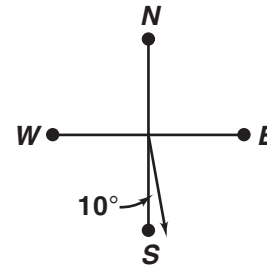
10.



11.



12.



13. about 97 mi at about 41° south of west

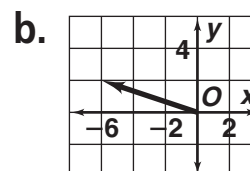
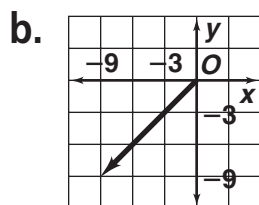
14. about 707 mi; about 65° south of west

15. about 54 mi/h; about 22° north of east

16. about 4805 km; about 12° north of west

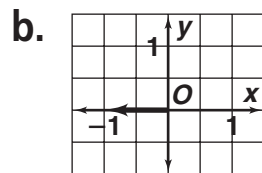
17. a. $\langle -9, -9 \rangle$

18. a. $\langle -6, 2 \rangle$

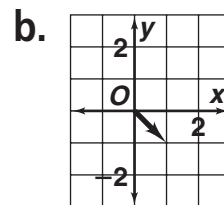


Answers for Lesson 8-6, pp. 455–459 Exercises (cont.)

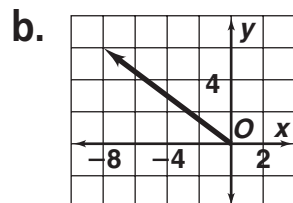
19. a. $\langle -1, 0 \rangle$



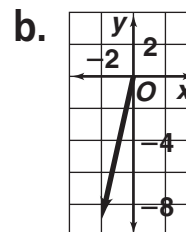
20. a. $\langle 1, -1 \rangle$



21. a. $\langle -8, 6 \rangle$



22. a. $\langle -2, -9 \rangle$



23. $\langle -1, 3 \rangle$

24. $\langle 4, -6 \rangle$

25. $\langle -2, 3 \rangle$

26. 35.9 mi/h; 12.9° south of west

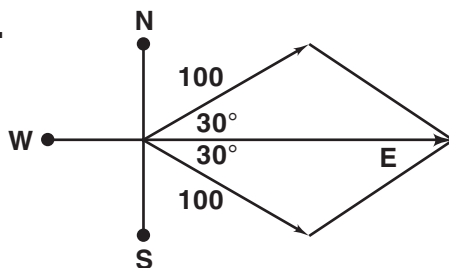
27. about 13.2° north of west

28. 304 mi/h; 9° east of south

29. Yes; both vectors have the same direction, but could have diff. mag.

30. $\langle 6, 1 \rangle$ has mag. $\sqrt{37}$, but $\langle 2, 1 \rangle$ has mag. $\sqrt{5}$.

31. a.



b. about 173 due east

32. Equal vectors have the same mag. and direction.

33. Vectors are \parallel if they have the same or opp. directions.

Answers for Lesson 8-6, pp. 455–459 Exercises (cont.)

34. C

35. a. $\langle 0, 0 \rangle$

b. \vec{a} and \vec{c} have = mag. and opp. direction.

36. about 386 mi/h at 14° south of west

37. $\begin{bmatrix} -1 \\ -2 \end{bmatrix}$

38. $\begin{bmatrix} 11 \\ -5 \end{bmatrix}$

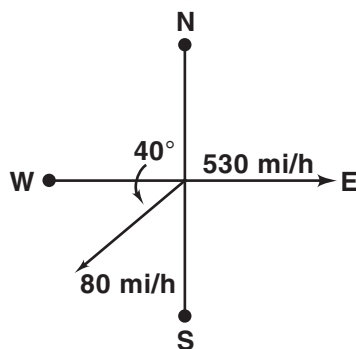
39. $\begin{bmatrix} -1 \\ 0 \end{bmatrix}$

40. A. III

B. II

C. I

41. a.

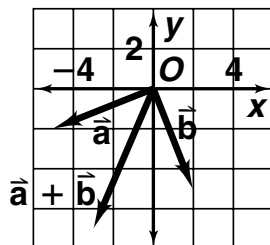


b. $\langle 530, 0 \rangle$; $\langle -61.3, -51.4 \rangle$

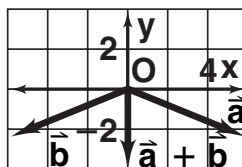
c. $\langle 468.7, -51.4 \rangle$

d. 471.5 mi/h at 6.3° south of east

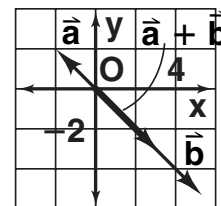
42. $\langle -3, -7 \rangle$



43. $\langle 0, -4 \rangle$



44. $\langle 3, -3 \rangle$



45. The vectors have the same mag.; the vectors have opp. directions.

46. Answers may vary. Sample: $\langle 7, 24 \rangle$, $\langle -7, 24 \rangle$, $\langle 7, -24 \rangle$, $\langle 24, 7 \rangle$

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47. a. about 15° south of west
b. about 6.7 h
48. a. about 24.1 mi; about 14.1 mi
b. about 28 mi at about 30° east of north
49. about 2229 ft; about 10°
50. a. $\frac{2}{3}$
b. Check students' work.
51. Answers may vary. Sample: zero vector = $\langle 0, 0 \rangle$; it has mag. 0 and no direction.
52. a. Yes; when you add integers, which are the coordinates of the vectors, order is not important.
b. yes; if the first two vectors are the same, but in the opp. order