

Answers for Lesson 13-2 Exercises

1. -315°

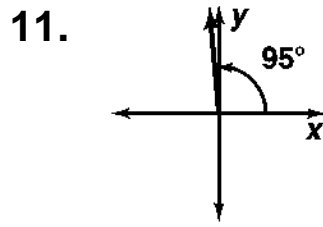
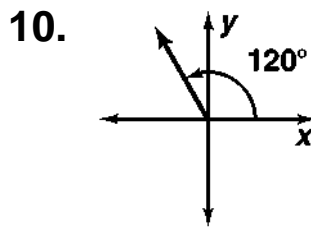
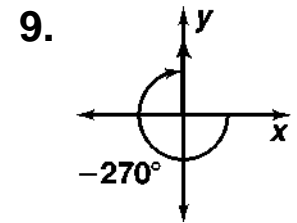
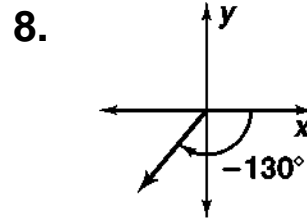
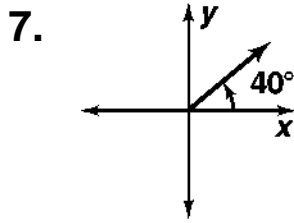
2. -135°

3. 240°

4. 115°

5. -110°

6. -340°



12. 25°

13. 215°

14. 315°

15. 4°

16. 140°

17. 150°

18. 55°

19. 180°

20. Answers may vary. Sample: $-135^\circ, 585^\circ$

21. $\frac{1}{2}, -\frac{\sqrt{3}}{2}; 0.50, -0.87$

22. $-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}; -0.71, -0.71$

23. $\frac{\sqrt{3}}{2}, -\frac{1}{2}; 0.87, -0.50$

24. $-\frac{1}{2}, \frac{\sqrt{3}}{2}; -0.50, 0.87$

25. $\frac{\sqrt{3}}{2}, \frac{1}{2}; 0.87, 0.50$

26. $\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}; 0.71, -0.71$

27. $\frac{\sqrt{3}}{2}, -\frac{1}{2}; 0.87, -0.50$

28. $-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}; -0.71, 0.71$

29. 1.00, 0.00

30. 0.85, 0.53

31. 0.71, -0.71

32. -0.87, 0.50

33. -0.09, -1.00

34. 0.98, -0.17

35. -0.90, 0.44

36. 0.00, 1.00

37-44. Answers may vary. Samples:

37. 4058, -315°

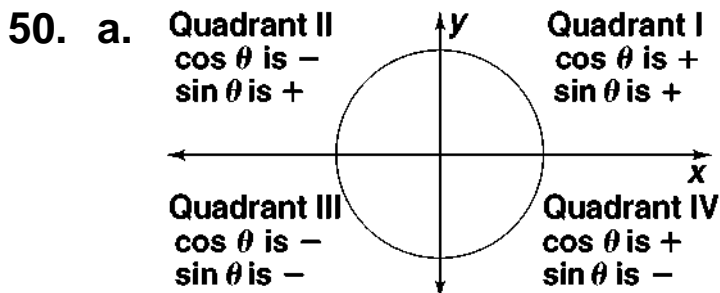
38. 2358, -485°

39. 458, -315°

40. 408, -320°

Answers for Lesson 13-2 Exercises (cont.)

41. $275^\circ, -445^\circ$ 42. $295^\circ, -65^\circ$ 43. $573^\circ, -147^\circ$
 44. $303^\circ, -417^\circ$ 45. II 46. III
 47. negative x -axis 48. IV 49. positive x -axis



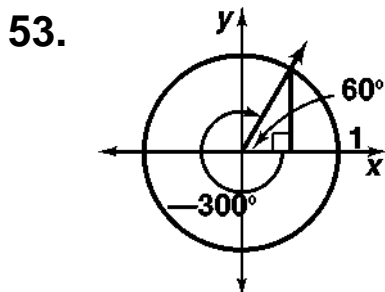
b. II

c. If the terminal side of an angle is in Quadrants I or II, then the sine of the angle is positive; otherwise it is not. If the terminal side of an angle is in Quadrants I or IV, then the cosine of the angle is positive; otherwise it is not.

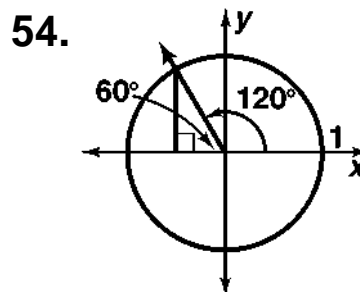
51. a. $0.77, 0.77, 0.77$

b. The cosines of the three angles are equal because the angles are coterminal.

52. The x -coordinate of the point on the ray defined by angle θ is equal to $\cos \theta$; similarly for the y -coordinate and $\sin \theta$. The terminal sides of the angles 0° , 180° , and 360° lie on the x -axis, and thus their sines are all 0 and their cosines are ± 1 . The angles 90° and 270° lie on the y -axis, so their cosines are 0 and their sines are 1 and -1 respectively.



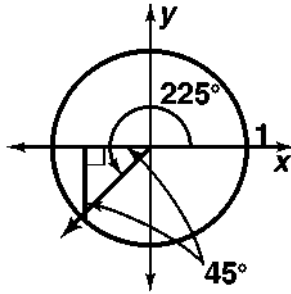
$$\frac{1}{2}, \frac{\sqrt{3}}{2}$$



$$-\frac{1}{2}, \frac{\sqrt{3}}{2}$$

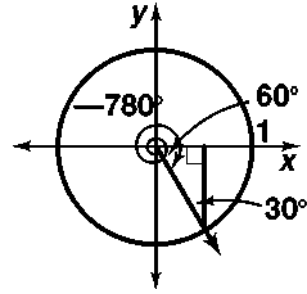
Answers for Lesson 13-2 Exercises (cont.)

55.



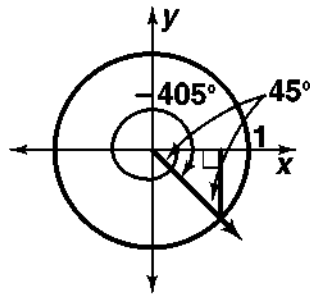
$$-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}$$

56.



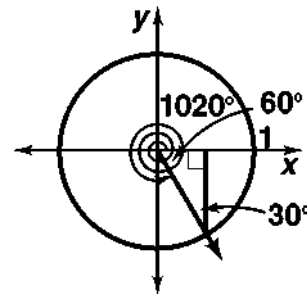
$$\frac{1}{2}, -\frac{\sqrt{3}}{2}$$

57.



$$\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}$$

58.

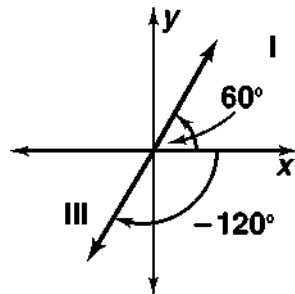


$$\frac{1}{2}, -\frac{\sqrt{3}}{2}$$

59. $\left(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$

60. Answers may vary. Sample: $30^\circ, 150^\circ, -210^\circ, 390^\circ$

61. No; yes; if the $\sin \theta$ and $\cos \theta$ are both negative, θ is in Quadrant III. -120° is in Quadrant III.



62. a. Check students' work.

b. -20°