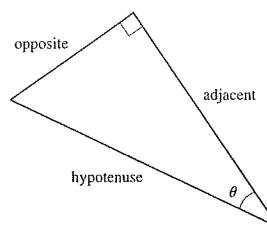


SECTION 6.2 ■ PAGE 448

1. (a)



(b) $\frac{\text{opposite}}{\text{hypotenuse}}, \frac{\text{adjacent}}{\text{hypotenuse}}, \frac{\text{opposite}}{\text{adjacent}}$

(c) similar

2. $\sin \theta, \cos \theta, \tan \theta$

3. $\sin \theta = \frac{4}{5}, \cos \theta = \frac{3}{5}, \tan \theta = \frac{4}{3}, \csc \theta = \frac{5}{4}, \sec \theta = \frac{5}{3}, \cot \theta = \frac{3}{4}$

4. $\sin \theta = \frac{7}{25}, \cos \theta = \frac{24}{25}, \tan \theta = \frac{7}{24}, \csc \theta = \frac{25}{7}, \sec \theta = \frac{25}{24}, \cot \theta = \frac{24}{7}$
5. $\sin \theta = \frac{40}{41}, \cos \theta = \frac{9}{41}, \tan \theta = \frac{40}{9}, \csc \theta = \frac{41}{40}, \sec \theta = \frac{9}{8}, \cot \theta = \frac{40}{15}$
6. $\sin \theta = \frac{15}{17}, \cos \theta = \frac{8}{17}, \tan \theta = \frac{15}{8}, \csc \theta = \frac{17}{15}, \sec \theta = \frac{8}{17}, \cot \theta = \frac{15}{17}$

7. $\sin \theta = 2\sqrt{13}/13, \cos \theta = 3\sqrt{13}/13, \tan \theta = \frac{2}{3}, \csc \theta = \sqrt{13}/2, \sec \theta = \sqrt{13}/3, \cot \theta = \frac{3}{2}$

8. $\sin \theta = \frac{7}{8}, \cos \theta = \sqrt{15}/8, \tan \theta = 7\sqrt{15}/15, \csc \theta = \frac{8}{7}, \sec \theta = 8\sqrt{15}/15, \cot \theta = \sqrt{15}/7$

9. (a) $3\sqrt{34}/34, 3\sqrt{34}/34$ (b) $\frac{3}{5}, \frac{3}{5}$ (c) $\sqrt{34}/5, \sqrt{34}/5$

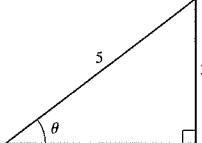
10. (a) $\frac{4}{7}, \frac{4}{7}$ (b) $4\sqrt{33}/33, 4\sqrt{33}/33$ (c) $7\sqrt{33}/33, 7\sqrt{33}/33$

11. $\frac{25}{2}$ 12. $12\sqrt{2}$ 13. $13\sqrt{3}/2$ 14. $4\sqrt{3}$ 15. 16.51658

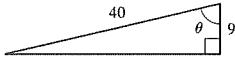
16. 31.30339 17. $x = 28 \cos \theta, y = 28 \sin \theta$

18. $x = 4 \tan \theta, y = 4 \sec \theta$

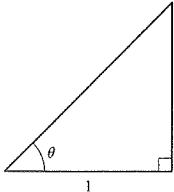
19. $\cos \theta = \frac{4}{5}, \tan \theta = \frac{3}{4}, \csc \theta = \frac{5}{3}, \sec \theta = \frac{5}{4}, \cot \theta = \frac{4}{3}$



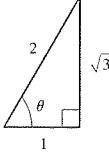
20. $\sin \theta = 7\sqrt{31}/40, \tan \theta = 7\sqrt{31}/9, \csc \theta = 40\sqrt{31}/217, \sec \theta = \frac{40}{9}, \cot \theta = 9\sqrt{31}/217$



21. $\sin \theta = \sqrt{2}/2, \cos \theta = \sqrt{2}/2, \tan \theta = 1, \csc \theta = \sqrt{2}, \sec \theta = \sqrt{2}$



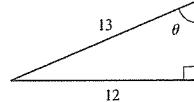
22. $\sin \theta = \sqrt{3}/2, \cos \theta = \frac{1}{2}, \csc \theta = 2\sqrt{3}/3, \sec \theta = 2, \cot \theta = \sqrt{3}/3$



23. $\sin \theta = 3\sqrt{5}/7, \cos \theta = \frac{2}{7}, \tan \theta = 3\sqrt{5}/2, \csc \theta = 7\sqrt{5}/15, \cot \theta = 2\sqrt{5}/15$



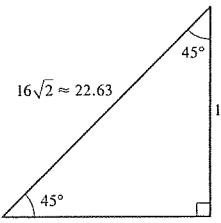
24. $\sin \theta = \frac{12}{13}, \cos \theta = \frac{5}{13}, \tan \theta = \frac{12}{5}, \sec \theta = \frac{13}{5}, \cot \theta = \frac{5}{12}$



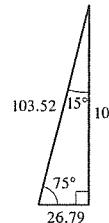
25. $(1 + \sqrt{3})/2$ 26. 1 27. 1 28. 1 29. $\frac{1}{2}$

30. $\frac{1}{4}(2 - \sqrt{3})$

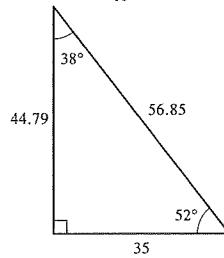
31.



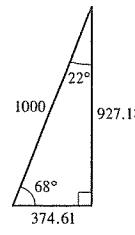
32.



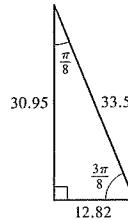
33.



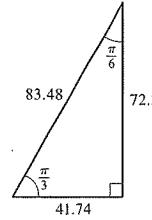
34.



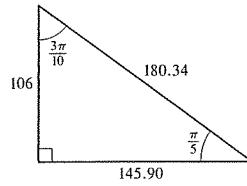
35.



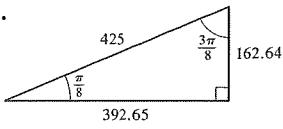
36.



37.



38.



39. $\sin \theta \approx 0.45, \cos \theta \approx 0.89, \tan \theta = 0.50, \csc \theta \approx 2.24, \sec \theta \approx 1.12, \cot \theta = 2.00$

40. $\sin 40^\circ \approx 0.64, \cos 40^\circ \approx 0.77, \tan 40^\circ \approx 0.83, \csc 40^\circ \approx 1.56, \sec 40^\circ \approx 1.39, \cot 40^\circ \approx 1.20$ 41. 230.9 42. 98.1 43. 63.7

44. 5.8 45. $x = 10 \tan \theta \sin \theta$

46. $a = \sin \theta, b = \tan \theta, c = \sec \theta, d = \cos \theta$ 47. 1026 ft

48. (a) 93,431 ft (b) 86,628 ft 49. (a) 2100 mi (b) No

50. 471 ft 51. 19 ft 52. 544 ft 53. 345 ft 54. 104.5 ft

55. 415 ft, 152 ft 56. 11,379 ft 57. 2570 ft 58. 3.7 mi

59. 5808 ft 60. 473 m 61. 91.7 million mi 62. (a) 89.05°

(b) 236,000 mi 63. 3960 mi 64. 2.53×10^{13} mi

65. 0.723 AU