

EXERCISES 1-5

Name the quadrant of angle θ .

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| 1. $\sin \theta > 0$; $\cos \theta > 0$ | 2. $\sin \theta < 0$; $\cos \theta > 0$ |
| 3. $\sin \theta < 0$; $\cos \theta < 0$ | 4. $\sin \theta > 0$; $\tan \theta > 0$ |
| 5. $\cos \theta > 0$; $\tan \theta < 0$ | 6. $\cos \theta < 0$; $\tan \theta < 0$ |

Use reference angles to find the value of each of the following.

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|--------------------------|------------------------|--------------------------|----------------------------|
| 7. $\sin 235^\circ$ | 8. $\cos 148^\circ$ | 9. $\tan 313^\circ$ | 10. $\cot(-160^\circ)$ |
| 11. $\sec(-231.5^\circ)$ | 12. $\csc 505.5^\circ$ | 13. $\cos 416^\circ 20'$ | 14. $\sin(-205^\circ 40')$ |

Use reference angles to give the exact value of the six trigonometric functions of each angle. Leave answers in simplest radical form.

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| 15. 240° | 16. 150° |
| 17. 225° | 18. 315° |
| 19. -240° | 20. -60° |
| 21. 480° | 22. 690° |

In Exercises 23–30, the terminal side of an angle θ in standard position passes through the given point. (a) Find $\sin \theta$ and $\cos \theta$. (b) Find θ to the nearest 0.1° . (Assume that $0^\circ < \theta < 360^\circ$.)

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|-----------------------------|------------------------|
| 23. $(-6, 8)$ | 24. $(5, -12)$ |
| 25. $(-8, -15)$ | 26. $(-20, 21)$ |
| 27. $(\sqrt{5}, -2)$ | 28. $(-3, \sqrt{7})$ |
| 29. $(\sqrt{3}, -\sqrt{6})$ | 30. $(-5, -\sqrt{11})$ |

In Exercises 31–38, one of $\sin \theta$, $\cos \theta$, or $\tan \theta$ is given. Find the other two. Leave answers in simplest radical form.

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| B 31. $\cos \theta = \frac{4}{5}$; θ in Quadrant IV | 32. $\tan \theta = -\frac{4}{3}$; θ in Quadrant II |
| 33. $\sin \theta = -\frac{1}{3}$; θ in Quadrant III | 34. $\cos \theta = \frac{3}{4}$; θ in Quadrant IV |
| 35. $\tan \theta = \frac{1}{2}$; $90^\circ < \theta < 360^\circ$ | 36. $\sin \theta = -\frac{3}{4}$; $0^\circ < \theta < 270^\circ$ |
| 37. $\cos \theta = \frac{1}{4}$; $0^\circ < \theta < 270^\circ$ | 38. $\cos \theta = -\frac{2}{5}$; $-90^\circ < \theta < 180^\circ$ |