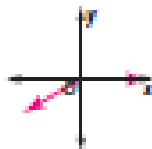


13-2 Practice (Average)

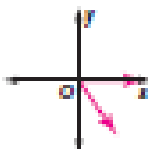
Angles and Angle Measure

Draw an angle with the given measure in standard position.

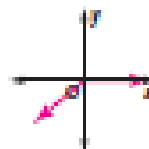
1. 210°



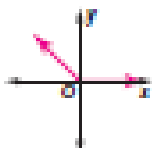
2. 308°



3. 580°



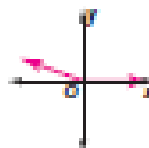
4. 135°



5. -450°



6. -560°



Rewrite each degree measure in radians and each radian measure in degrees.

7. $18^\circ = \frac{\pi}{10}$

8. $6^\circ = \frac{\pi}{30}$

9. $870^\circ = \frac{29\pi}{6}$

10. $347^\circ = \frac{347\pi}{180}$

11. $-72^\circ = -\frac{2\pi}{5}$

12. $-830^\circ = -\frac{41\pi}{9}$

13. $-250^\circ = -\frac{25\pi}{18}$

14. $-168^\circ = -\frac{11\pi}{12}$

15. $4\pi = 720^\circ$

16. $\frac{5\pi}{2} = 450^\circ$

17. $\frac{13\pi}{5} = 468^\circ$

18. $\frac{13\pi}{30} = 78^\circ$

19. $-\frac{9\pi}{2} = -810^\circ$

20. $-\frac{7\pi}{12} = -105^\circ$

21. $-\frac{3\pi}{8} = -67.5^\circ$

22. $-\frac{3\pi}{16} = -33.75^\circ$

Find one angle with positive measure and one angle with negative measure coterminal with each angle. 23–34. Sample answers are given.

23. $65^\circ = 425^\circ, -295^\circ$

24. $80^\circ = 440^\circ, -280^\circ$

25. $288^\circ = 645^\circ, -75^\circ$

26. $110^\circ = 470^\circ, -250^\circ$

27. $-37^\circ = 323^\circ, -397^\circ$

28. $-93^\circ = 267^\circ, -453^\circ$

29. $\frac{2\pi}{5} = \frac{12\pi}{5}, -\frac{8\pi}{5}$

30. $\frac{5\pi}{6} = \frac{17\pi}{6}, -\frac{7\pi}{6}$

31. $\frac{17\pi}{6} = \frac{29\pi}{6}, -\frac{7\pi}{6}$

32. $-\frac{3\pi}{2} = \frac{\pi}{2}, -\frac{7\pi}{2}$

33. $-\frac{\pi}{4} = \frac{7\pi}{4}, -\frac{9\pi}{4}$

34. $-\frac{5\pi}{12} = \frac{19\pi}{12}, -\frac{29\pi}{12}$

35. **TIME** Find both the degree and radian measures of the angle through which the hour hand on a clock rotates from 5 A.M. to 10 A.M. $-150^\circ; -\frac{5\pi}{6}$

36. **ROTATION** A truck with 16-inch radius wheels is driven at 77 feet per second (52.5 miles per hour). Find the measure of the angle through which a point on the outside of the wheel travels each second. Round to the nearest degree and nearest radian. $3309^\circ/\text{s}; 58 \text{ radians/s}$