

3. Discuss the difference between a coterminal angle and a reference angle.

4. Explain how the cosine of an angle in the second quadrant differs from the cosine of its reference angle in the unit circle.

5. Explain how the sine of an angle in the second quadrant differs from the sine of its reference angle in the unit circle.

For the following exercises, state the reference angle for the given angle.

23.  $240^\circ$

24.  $-170^\circ$

25.  $100^\circ$

26.  $-315^\circ$

27.  $135^\circ$

28.  $\frac{5\pi}{4}$

29.  $\frac{2\pi}{3}$

30.  $\frac{5\pi}{6}$

31.  $\frac{-11\pi}{3}$

32.  $\frac{-7\pi}{4}$

33.  $\frac{-\pi}{8}$

For the following exercises, find the reference angle, the quadrant of the terminal side, and the sine and cosine of each angle. If the angle is not one of the angles on the unit circle, use a calculator and round to three decimal places.

34.  $225^\circ$

35.  $300^\circ$

36.  $320^\circ$

37.  $135^\circ$

38.  $210^\circ$

39.  $120^\circ$

40.  $250^\circ$

41.  $150^\circ$

42.  $\frac{5\pi}{4}$

43.  $\frac{7\pi}{6}$

44.  $\frac{5\pi}{3}$

45.  $\frac{3\pi}{4}$

46.  $\frac{4\pi}{3}$

47.  $\frac{2\pi}{3}$

48.  $\frac{5\pi}{6}$

49.  $\frac{7\pi}{4}$