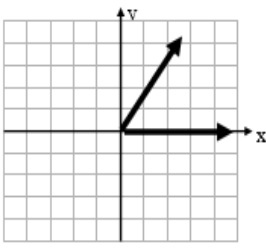
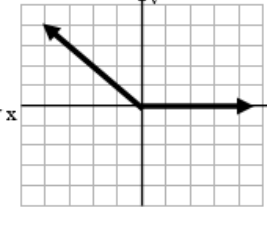
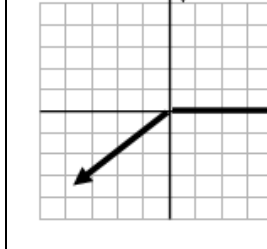
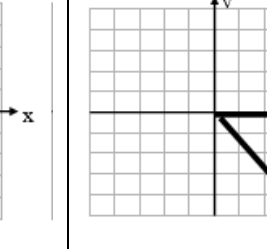


Quadrant	Quadrant 1	Quadrant 2	Quadrant 3	Quadrant 4
Picture:				
Degrees:	Ref $\angle = \theta$	Ref $\angle = 180 - \theta$	Ref $\angle = \theta - 180$	Ref $\angle = 360 - \theta$
Radians:	Ref $\angle = \theta$	Ref $\angle = \pi - \theta$	Ref $\angle = \theta - \pi$	Ref $\angle = 2\pi - \theta$

** If starting angle is Greater than 360° (2π), start by subtracting 360 (2π), from the starting angle until the angle is between 0° and 360° (2π). Then find the reference angle.

** If starting angle is negative, start by adding 360 (2π), from the starting angle until the angle is between 0° and 360° (2π). Then find the reference angle.

For each of the following, find the reference angle θ .

1. $\theta = 57^\circ$ 2. $\theta = 113^\circ$ 3. $\theta = 300^\circ$ 4. $\theta = 280^\circ$

5. $\theta = 100^\circ$ 6. $\theta = 420^\circ$ 7. $\theta = 340^\circ$ 8. $\theta = 225^\circ$

9. $\theta = 143^\circ$ 10. $\theta = 30^\circ$ 11. $\theta = 120^\circ$ 12. $\theta = 315^\circ$

13. $\theta = 240^\circ$ 14. $\theta = -230^\circ$ 15. $\theta = -135^\circ$ 16. $\theta = -60^\circ$

17. $\theta = \frac{7\pi}{6}$ 18. $\theta = \frac{5\pi}{3}$ 19. $\theta = \frac{\pi}{6}$ 20. $\theta = \frac{5\pi}{4}$

21. $\theta = -\frac{2\pi}{3}$ 22. $\theta = \frac{-4\pi}{3}$ 23. $\theta = \frac{17\pi}{4}$ 24. $\theta = \frac{-11\pi}{6}$