

## Radians & Reference Angles

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**Convert each degree measure into radians and each radian measure into degrees.**

1)  $340^\circ$

2)  $150^\circ$

3)  $\frac{\pi}{2}$

4)  $\frac{\pi}{12}$

5)  $\frac{17\pi}{12}$

6)  $\frac{\pi}{9}$

7)  $\frac{\pi}{4}$

8)  $\frac{5\pi}{3}$

9)  $90^\circ$

10)  $\frac{7\pi}{4}$

11)  $10^\circ$

12)  $\frac{\pi}{3}$

13)  $195^\circ$

14)  $135^\circ$

15)  $190^\circ$

16)  $30^\circ$

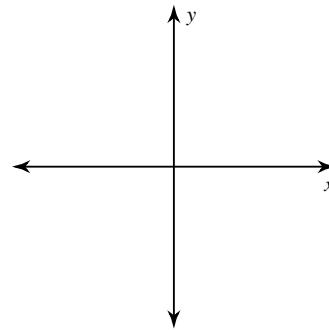
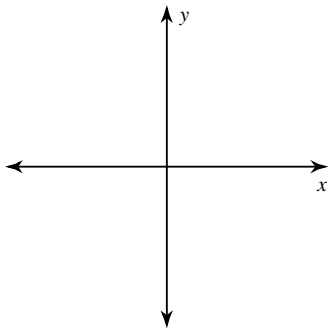
17)  $315^\circ$

18)  $\pi$

**Draw an angle with the given measure in standard position.**

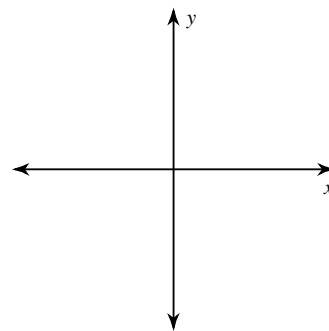
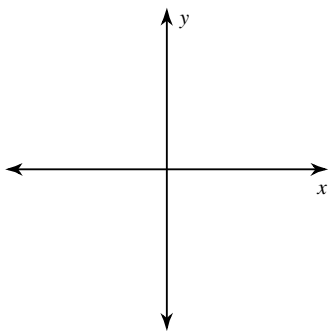
19)  $\frac{3\pi}{2}$

20)  $\frac{2\pi}{3}$

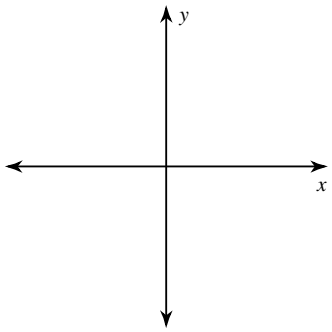


21)  $\frac{11\pi}{6}$

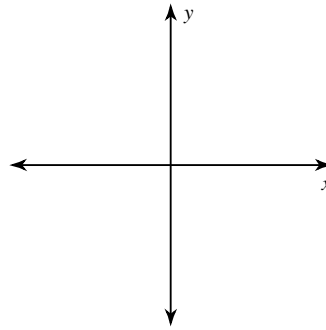
22)  $-\frac{7\pi}{4}$



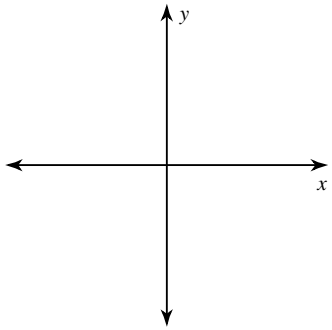
23)  $-\frac{5\pi}{3}$



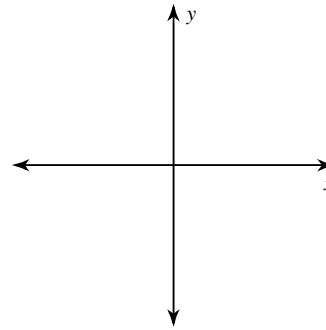
24)  $\pi$



25)  $\frac{\pi}{2}$



26)  $-\frac{\pi}{4}$



**Find the reference angle.**

27)  $150^\circ$

28)  $165^\circ$

29)  $-225^\circ$

30)  $-290^\circ$

31)  $-230^\circ$

32)  $-350^\circ$

33)  $230^\circ$

34)  $300^\circ$

35)  $100^\circ$

36)  $-315^\circ$

37)  $\frac{5\pi}{4}$

38)  $\frac{3\pi}{4}$

39)  $-\frac{4\pi}{3}$

40)  $\frac{4\pi}{3}$

41)  $\frac{7\pi}{6}$

42)  $\frac{11\pi}{6}$

43)  $\frac{2\pi}{3}$

44)  $-\frac{2\pi}{3}$

45)  $\frac{5\pi}{6}$

46)  $\frac{5\pi}{3}$

47)  $-\frac{7\pi}{4}$

48)  $\frac{7\pi}{4}$