Name_____

Trigonometric Functions (chapter 7)

Date_____ Period_____

Convert each decimal degree measure into degrees-minutes-seconds.

1) 349.5325°

349° 31' 57"

2) 343.6925°

343° 41' 33"

3) 205.36°

205° 21' 36"

Convert each degrees-minutes-seconds into decimal degrees.

4) 267° 48' 0"

267.8°

5) 319° 45' 18"

319.755°

6) 65° 24' 54"

65.415°

Convert each degree measure into radians.

7) 190°

$\dfrac{19\pi}{18}$

8) 135°

$\dfrac{3\pi}{4}$

9) 15°

$\dfrac{\pi}{12}$

Convert each radian measure into degrees.

10) $\dfrac{\pi}{4}$

45°

11) $\dfrac{25\pi}{36}$

125°

12) $-\dfrac{17\pi}{6}$

-510°

State if the given angles are coterminal.

13) 210°, −570°

No

14) 335°, 1055°
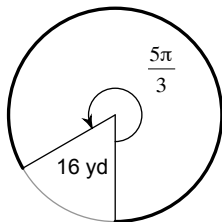
Yes

15) $\dfrac{43\pi}{36}$, $-\dfrac{29\pi}{36}$
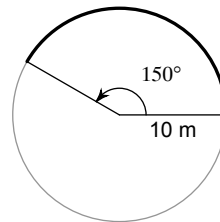
Yes

16) $\dfrac{3\pi}{2}$, $\dfrac{7\pi}{2}$

Yes

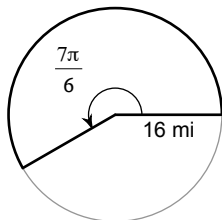**Find the length of each arc.**

17)

$\dfrac{80\pi}{3}$ yd

18)

$\dfrac{25\pi}{3}$ m

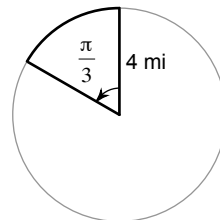**Find the area of each sector.**

19)

$\dfrac{448\pi}{3}$ mi²

20)

$\dfrac{8\pi}{3}$ mi²

21) What is the apparent size of an object 24 in long held 130 in from your eyes?

.185 radians = 10.578°

Find the reference angle for each given angle.

22) 175°

5°

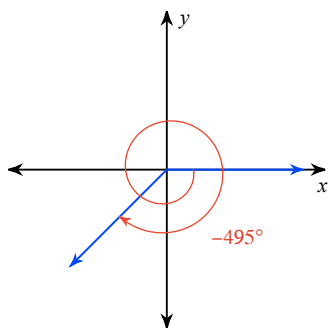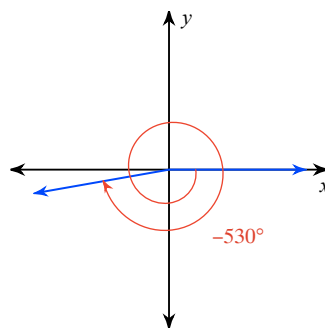23) $\dfrac{61\pi}{36}$

$\dfrac{11\pi}{36}$
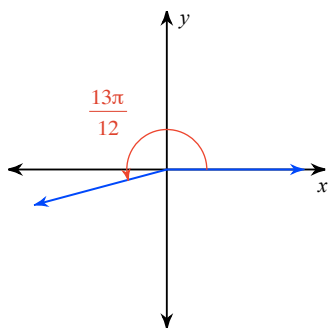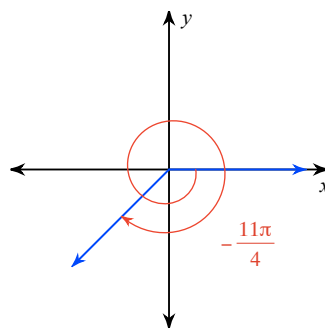
Find the reference angle.

24)

45°

25)

10°

26)

$\dfrac{\pi}{12}$

27)

$\dfrac{\pi}{4}$

Find the exact value of each trigonometric function.

28) sin 135°

$\dfrac{\sqrt{2}}{2}$

29) cos 210°

$-\dfrac{\sqrt{3}}{2}$

30) tan 300°

$-\sqrt{3}$

31) sin −585°

$\dfrac{\sqrt{2}}{2}$

32) $\cos 405°$

$$\frac{\sqrt{2}}{2}$$

33) $\sin \frac{3\pi}{4}$

$$\frac{\sqrt{2}}{2}$$

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

$$-\frac{1}{2}$$

35) $\tan \frac{5\pi}{6}$

$$-\frac{\sqrt{3}}{3}$$

36) $\sin 5\pi$

0

37) $\cos -\pi$

−1

38) $\tan -\frac{5\pi}{6}$

$$\frac{\sqrt{3}}{3}$$

39) $\csc 0°$

Undefined

40) $\csc -990°$

1

41) $\sec 30°$

$$\frac{2\sqrt{3}}{3}$$

42) $\sec 690°$

$$\frac{2\sqrt{3}}{3}$$

43) $\cot 0°$

Undefined

44) $\cot -660°$

$$\frac{\sqrt{3}}{3}$$

45) $\csc \frac{7\pi}{6}$

−2

46) $\csc -4\pi$

Undefined

47) $\sec \frac{11\pi}{6}$

$$\frac{2\sqrt{3}}{3}$$

48) $\sec -\frac{\pi}{4}$

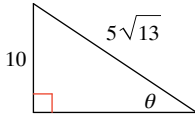$$\sqrt{2}$$

49) $\cot \frac{\pi}{6}$

$$\sqrt{3}$$

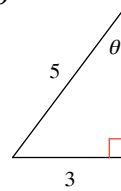50) $\cot -\dfrac{11\pi}{3}$

$\dfrac{\sqrt{3}}{3}$

Find the value of the trig function indicated.
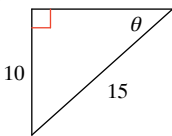
51) $\csc \theta$

$\dfrac{\sqrt{13}}{2}$

52) $\sec \theta$

$\dfrac{5}{4}$

53) $\cot \theta$

$\dfrac{\sqrt{5}}{2}$

54) Find $\sin \theta$ if $\cot \theta = \dfrac{1}{2}$

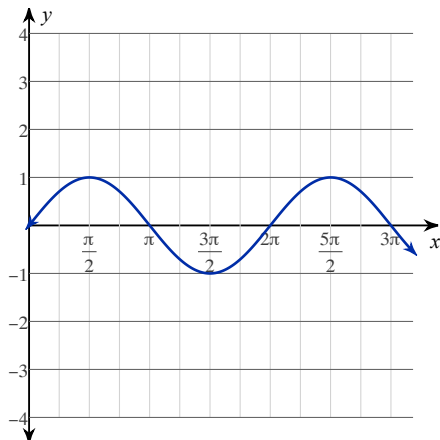$\dfrac{2\sqrt{5}}{5}$

55) Find $\csc \theta$ if $\cot \theta = 1$

$\sqrt{2}$

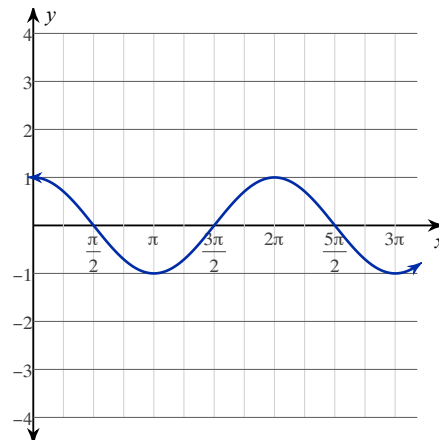56) Find $\tan \theta$ if $\cos \theta = \dfrac{3}{4}$

$\dfrac{\sqrt{7}}{3}$

Write the function for each graph.
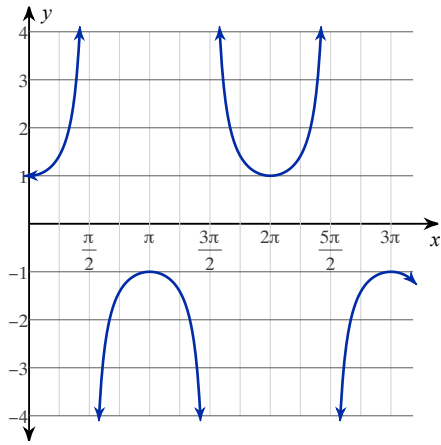
57) function: _____
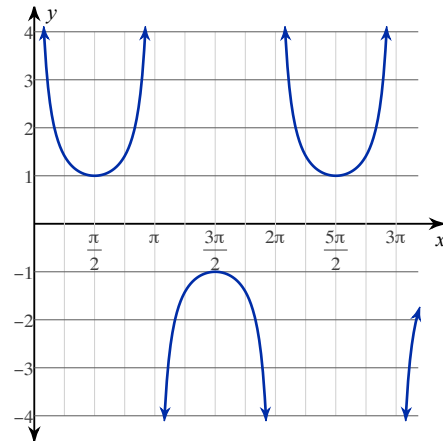

$y = \sin \theta$

58) function: _____

$y = \cos \theta$
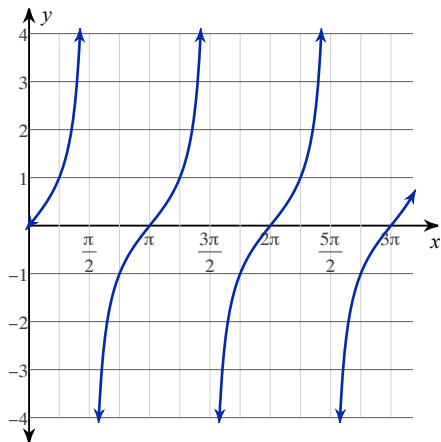
59) function: _____

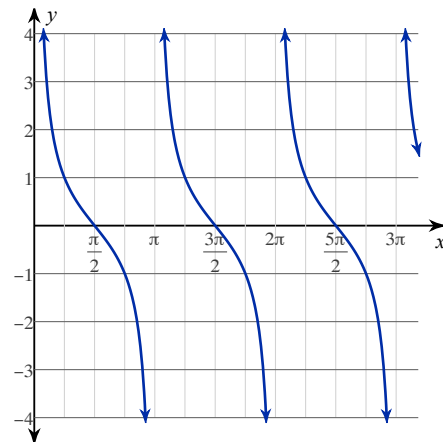

$y = \sec\ \theta$

60) function: _____

$y = \csc\ \theta$

61) function: _____

$y = \tan\ \theta$

62) function: _____

$y = \cot\ \theta$