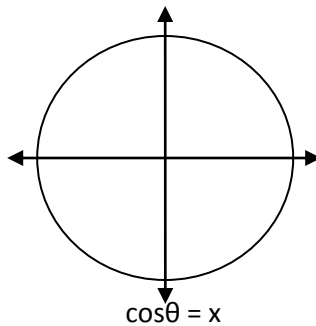
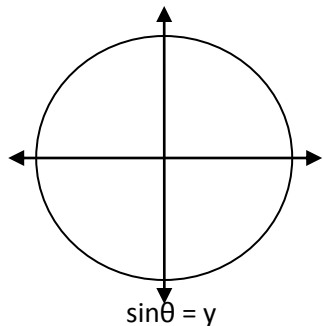


1) Fill in the quadrants of each circle with the correct sign (positive or negative).



Determine if the following values are positive, negative, zero, +1 or -1.

2)  $\sin 177^\circ$

3)  $\cos 210.5^\circ$

4)  $\sin 742^\circ$

5)  $\cos (-270^\circ)$

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

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

8)  $\cos 5\pi$

9)  $\cos -\frac{3\pi}{4}$

10)  $\sin 1.6$  radians

11)  $\cos 4$  radians

Determine which quadrant or axis is being described.

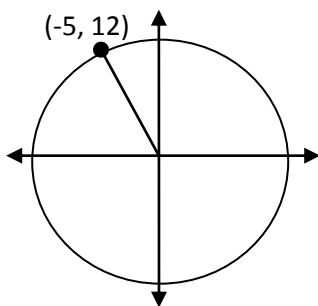
12)  $\sin \theta > 0$  and  $\cos \theta < 0$

13)  $\sin \theta < 0$  and  $\cos \theta = 0$

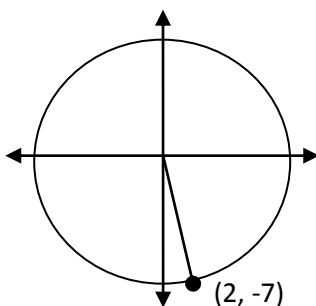
14)  $\sin \theta > 0$  and  $\sin(\theta - 90) < 0$

Find  $\sin \theta$  and  $\cos \theta$  for each angle pictured. Remember,  $\sin \theta = \frac{y}{r}$  and  $\cos \theta = \frac{x}{r}$

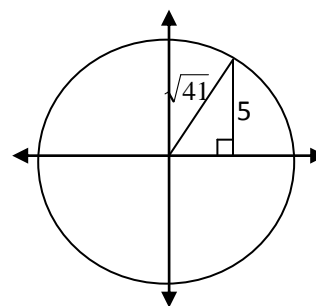
15)



16)



17)



Find the appropriate reference angle for each angle given. Formulas:  $180 - \alpha$  or  $\alpha - 180$  or  $360 - \alpha$

18)  $\cos 99^\circ$

19)  $\sin 300^\circ$

20)  $\cos (-22)^\circ$

21)  $\cos 571^\circ$

22)  $\sin (-225)^\circ$

23)  $\sin 875.25^\circ$

Give the exact sine or cosine values using reference angles for each angle given.

24)  $\cos 240^\circ$

25)  $\cos (-45)^\circ$

26)  $\sin 480^\circ$

27)  $\sin \frac{5\pi}{4}$

28)  $\cos \frac{11\pi}{6}$

29)  $\sin -3\pi$

Use a calculator to find the value of each expression to four decimal places.

30)  $\sin 107^\circ$

31)  $\cos (-33)^\circ$

32)  $\sin 229^\circ 24'$

33)  $\sin 2.9$  radians

34)  $\cos 5.45$

35)  $\cos (-2)$