Convert from degrees to radian.

a. $120° \cdot \frac{\pi}{180}$

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

b. $-200° \cdot \frac{\pi}{180}$

$-\frac{10\pi}{9}$

2. Convert from radian to degree.

a. $\frac{7\pi}{4}$ radian

$\frac{7\pi}{4} \cdot \frac{180}{\pi}$ (45)

$315°$

b. 6 radian $= \frac{1080}{\pi}$

$6 \cdot \frac{180}{\pi}$

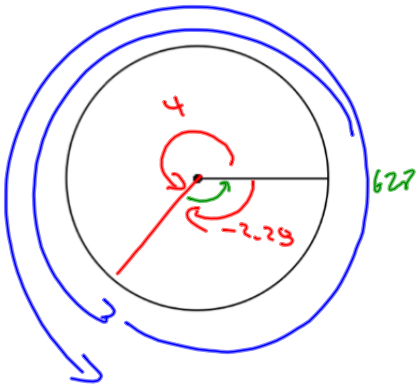
$6 \cdot 80 = 480$

$6 \cdot 100 = 600$

1080

3. Use the provided circle to draw the terminal side of the requested radian angle. Also give the measure of two other coterminal angles.

a. 4 radian

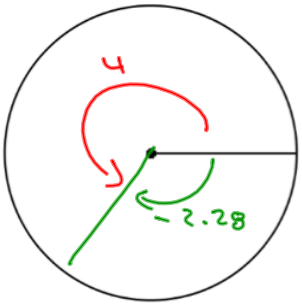


Two coterminal angles:

-2.28

10.28

b. -2.28 radian



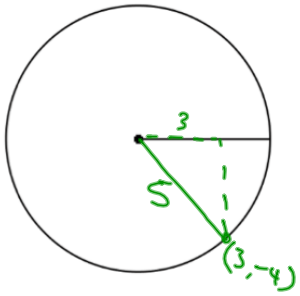
Two coterminal angles:

4

10.28

4. Draw each angel in standard position and state the value of the trig ratio for the angle with terminal side ending at:

a. $(3,-4)$ (x, y)



$r = \sqrt{x^2 + y^2}$

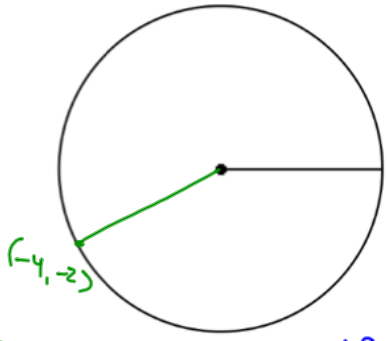
$r = \sqrt{9+16} = \sqrt{25} = 5$

$\sin\theta = \frac{y}{r} = \frac{-4}{5}$

$\cos\theta = \frac{x}{r} = \frac{3}{5}$

$\tan\theta = \frac{y}{x} = \frac{-4}{3}$

b. $(-4,-2)$



$r = \sqrt{16+4}$

$r = \sqrt{20} = \sqrt{4}\cdot\sqrt{5} = 2\sqrt{5}$

$\sin\theta =$

$\cos\theta =$

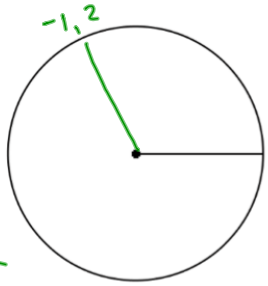
$\tan\theta =$

$\sin\theta = \frac{-2}{2\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = -\frac{\sqrt{5}}{5}$

$\cos\theta = \frac{-4}{2\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = -\frac{2\sqrt{5}}{5}$

$\tan\theta = \frac{-2}{-4} = \frac{1}{2}$

c. $(-1,2)$



$r = \sqrt{1+4} = \sqrt{5}$

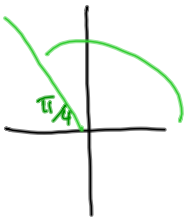
$\sin\theta = \frac{2}{\sqrt{5}} = \frac{2\sqrt{5}}{5}$

$\cos\theta = \frac{-1}{\sqrt{5}} = -\frac{\sqrt{5}}{5}$

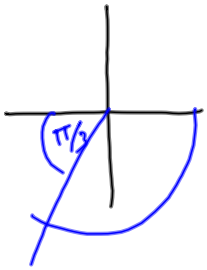
$\tan\theta = \frac{2}{-1} = -2$

1. Evaluate each.

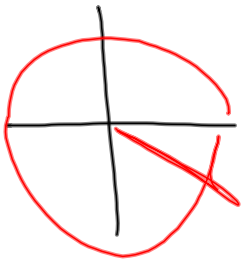
a. $\sin\frac{3\pi}{4} =$ $+\frac{\sqrt{2}}{2}$



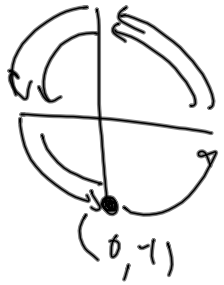
b. $\tan\left(-\frac{2\pi}{3}\right) = \frac{y}{x} = +\frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \frac{\sqrt{3}}{2} \cdot \frac{2}{1} = \sqrt{3}$



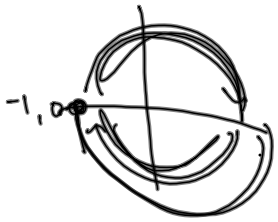
c. $\cos\frac{11\pi}{6} = +\frac{\sqrt{3}}{2}$



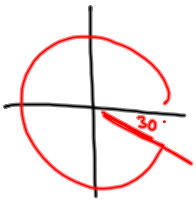
d. $\sin\frac{21\pi}{6} =$ $\sin\frac{7\pi}{2} = -1$



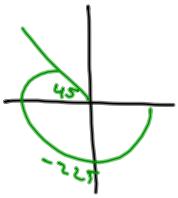
e. $\cos(-3\pi) =$ -1



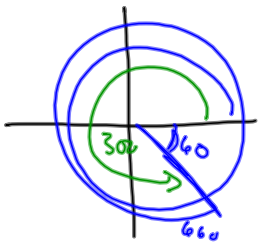
f. $\tan(330°) =$ $-\dfrac{1/2}{\sqrt{3}/2} = -\dfrac{1}{2}\cdot\dfrac{2}{\sqrt{3}} = -\dfrac{1}{\sqrt{3}} = -\dfrac{\sqrt{3}}{3}$



g. $\sin(-225°) =$ $+\dfrac{\sqrt{2}}{2}$

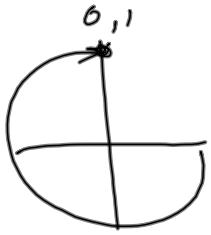


h. $\tan(660°) = -\dfrac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = -\frac{\sqrt{3}}{2} \cdot \frac{2}{1} = -\sqrt{3}$



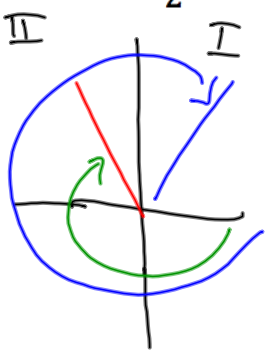
g. $\cos(120°) = -\frac{1}{2}$

h. $\tan(-270°) = \frac{1}{0}$ = undefined



2. Determine four answers for the angle θ on the interval $-2\pi < \theta < 2\pi$.

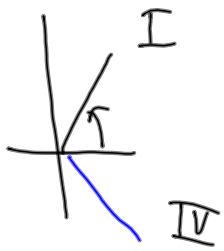
a. $\sin\theta = \frac{\sqrt{3}}{2}$



I $\frac{\pi}{3}$ $-\frac{5\pi}{3}$

II $\frac{2\pi}{3}$ $-\frac{4\pi}{3}$

b. $\cos\theta = \frac{\sqrt{2}}{2}$

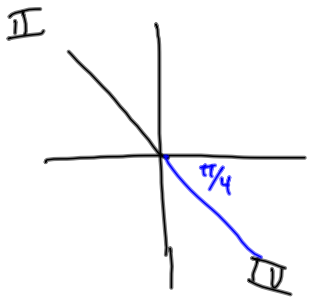


I | IV

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

$-\frac{7\pi}{4}$ | $-\frac{\pi}{4}$

c. $\tan\theta = -1$

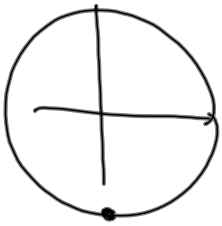


II | IV

$\frac{3\pi}{4}$ | $\frac{7\pi}{4}$

$-\frac{5\pi}{4}$ | $-\frac{\pi}{4}$

d. $\sin\theta = -1$



$-\frac{\pi}{2}$

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