

Look at #9 from yesterday

8. $\tan^{-1}\left(\tan\frac{2\pi}{3}\right)$

$= \tan^{-1}(-\sqrt{3})$

$= -\frac{\pi}{3} \text{ or } -\frac{11}{3}$



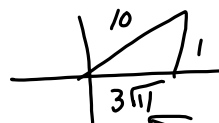
9. $\tan(\sin^{-1}.1)$

$= \tan$

I+

$.1 = \frac{1}{10}$

$\tan = \frac{O}{A}$
 $\frac{1}{3\sqrt{11}} = \frac{\sqrt{11}}{33}$



$a^2 + b^2 = c^2$

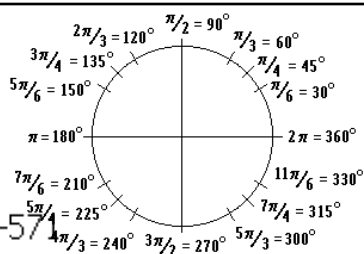
$b^2 = 100 - 1$

$b^2 = 99$

$b = \sqrt{99} = \sqrt{9 \cdot 11}$

$b = 3\sqrt{11}$

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Pp. 570-571

GrHW13 due next Friday

If you're not going to be in school, schedule to take it early. Or you can take it the first day back after break.

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

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

10) $-\frac{\pi}{3}$

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

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

46) $\frac{1}{2}$

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

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

52) $\frac{4\sqrt{19}}{19}$

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

Jan 19-3:45 PM

GrHW13 due next Wednesday

$\frac{2\pi}{3} = 120^\circ$ $\frac{\pi}{2} = 90^\circ$ $\frac{\pi}{3} = 60^\circ$
 $\frac{3\pi}{4} = 135^\circ$ $\frac{\pi}{4} = 45^\circ$
 $\frac{5\pi}{6} = 150^\circ$ $\frac{\pi}{6} = 30^\circ$
 $\pi = 180^\circ$
 $\frac{7\pi}{6} = 210^\circ$ $\frac{11\pi}{6} = 330^\circ$
 $\frac{5\pi}{4} = 225^\circ$ $\frac{7\pi}{4} = 315^\circ$
 $\frac{4\pi}{3} = 240^\circ$ $\frac{3\pi}{2} = 270^\circ$ $\frac{5\pi}{3} = 300^\circ$

Pp. 570-571

2) $\frac{\pi}{3}$ 6) $\frac{\pi}{4}$ 10) $-\frac{\pi}{3}$ 14) $-\frac{\pi}{4}$ 18) $\frac{\pi}{3}$

46) $\frac{1}{2}$ 48) $\frac{\pi}{2}$ 50) $-\frac{\pi}{2}$ (52) $\frac{4\sqrt{19}}{19}$ (54) $\frac{\pi}{4}$

52) $\cos(\tan^{-1}(\frac{\sqrt{3}}{4}))$ I+ , IV -

$\frac{\sqrt{19}}{4}$ $4^2 + 15^2 = c^2$ $\cos \theta = \frac{4}{\sqrt{19}} = \frac{4\sqrt{19}}{19}$
 $c^2 = 19$
 $c = \sqrt{19}$

54) $\tan^{-1}(\tan^{-1}(\frac{\sqrt{3}}{4}))$ $-\frac{\pi}{4}$ $\frac{\pi}{4}$ Q III

$= \tan^{-1}(\tan \frac{\pi}{4})$
 $= \tan^{-1}(1)$ (I+) $\frac{\pi}{4}$

cos -	sin +
tan +	cos +
X	sin -
	tan -

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Trig Equations



Dec 26-11:19 AM

6.5 Trig Equations

PreCalc
Ch 8 Day 2

1. Draw a picture find the reference angle

2. Remember: $\begin{array}{c|c} S & A \\ \hline T & C \end{array}$

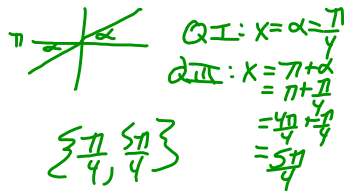
3. Find the angle in radians using reference angles and quadrants

4. Know your special $\angle$ chart. $\{$

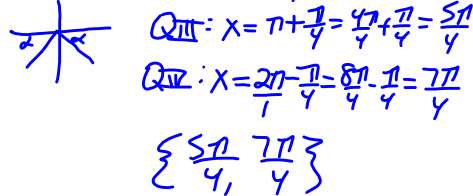
Find exact value(s) where appropriate, to four decimal places otherwise.

Solve, find all solutions $[0, 2\pi)$ Radians only

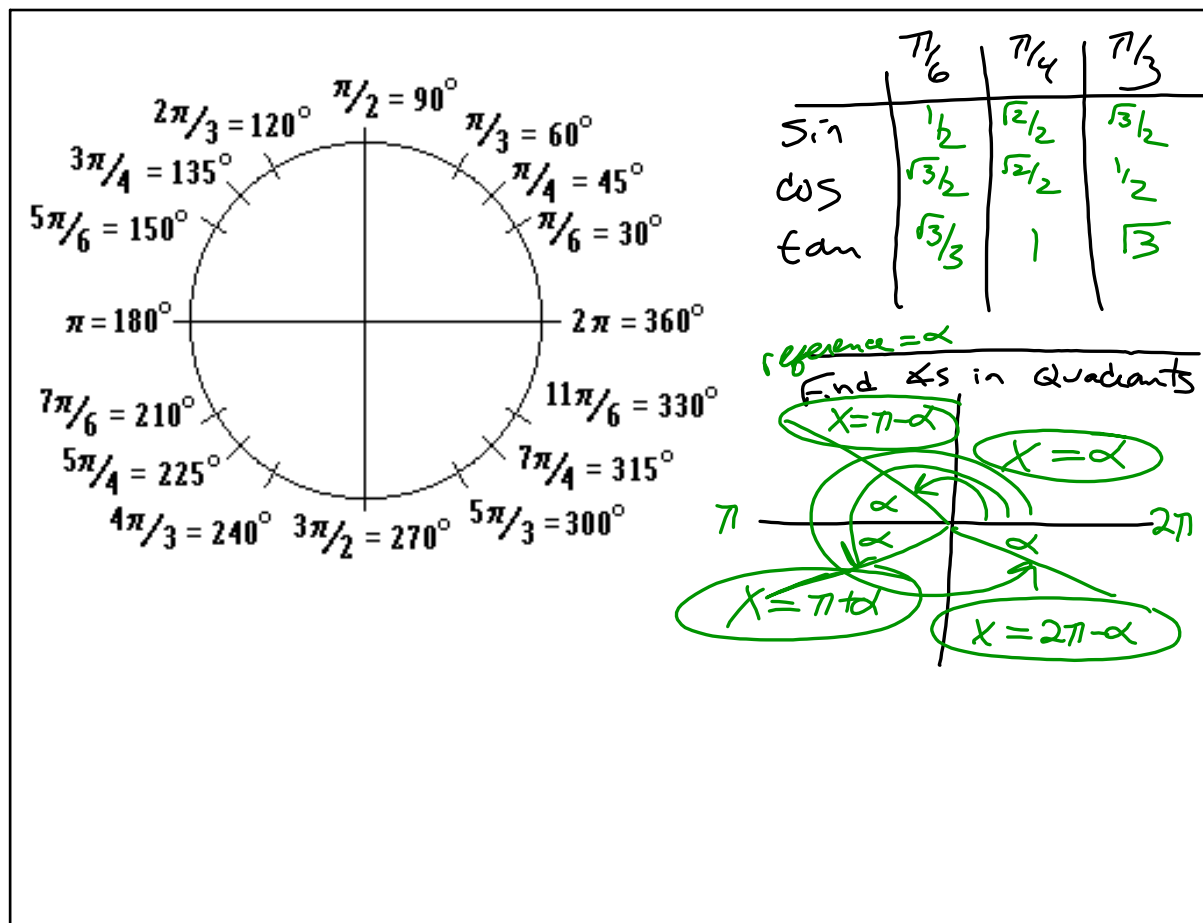
1. $\tan x = 1 \rightarrow \alpha = \frac{\pi}{4}$



2. $\sin x = -\frac{\sqrt{2}}{2} \rightarrow \alpha = \frac{\pi}{4}$

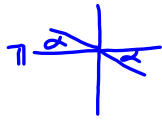


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3. $\tan x = -\sqrt{3} \rightarrow \alpha = \frac{\pi}{3}$

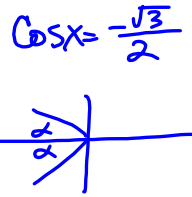


QII: $x = \pi - \frac{\pi}{3} = \frac{2\pi}{3}$

QIV: $x = 2\pi - \frac{\pi}{3} = \frac{5\pi}{3}$

$\left\{ \frac{2\pi}{3}, \frac{5\pi}{3} \right\}$

4. $\frac{2\cos x}{2} = -\frac{\sqrt{3}}{2}$



$\cos x = -\frac{\sqrt{3}}{2} \rightarrow \alpha = \frac{\pi}{6}$

QIII: $x = \pi - \frac{\pi}{6} = \frac{5\pi}{6}$

QIV: $x = \pi + \frac{\pi}{6} = \frac{7\pi}{6}$

$\left\{ \frac{5\pi}{6}, \frac{7\pi}{6} \right\}$

S/A
T/C

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5. $2\sin^2 x = 1$

$\sqrt{\sin^2 x} = \sqrt{\frac{1}{2}}$

$\sin x = \pm \sqrt{\frac{1}{2}}$

$\sin x = \pm \frac{\sqrt{2}}{2} = \pm \frac{1}{\sqrt{2}}$

$\sin x = \pm \frac{\sqrt{2}}{2} \rightarrow \alpha = \frac{\pi}{4}$



QI: $x = \alpha = \frac{\pi}{4}$

QII: $x = \pi - \frac{\pi}{4} = \frac{3\pi}{4}$

QIII: $x = \pi + \frac{\pi}{4} = \frac{5\pi}{4}$

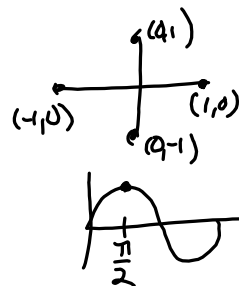
QIV: $x = 2\pi - \frac{\pi}{4} = \frac{7\pi}{4}$

$\left\{ \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4} \right\}$

6. $\sin x + 2 = 3$

$\sin x = 1$

$\left\{ \frac{\pi}{2} \right\}$



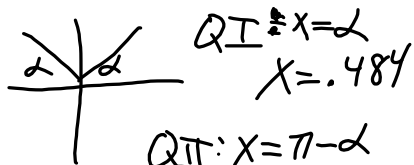
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7. $\sin x = 0.465$

$$\alpha = \sin^{-1}(0.465)$$

$$\alpha = .4836346112$$

sin +

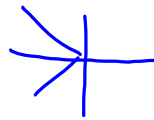


QII: $x = \pi - \alpha$
 $= \pi - .4836 \dots$
 $x = 2.658$

$$\{.484, 2.658\}$$

8. $\cos x = -0.564$

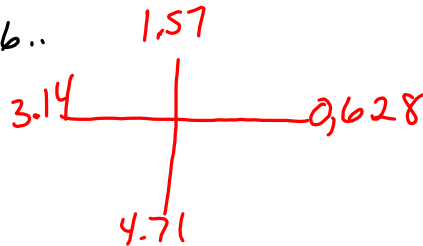
$$\alpha = \cos^{-1}(-.564) = .9715745 \dots$$



QII: $\pi - \alpha = 2.170$

QIII: $\pi + \alpha = 4.113$

$$\{2.170, 4.113\}$$



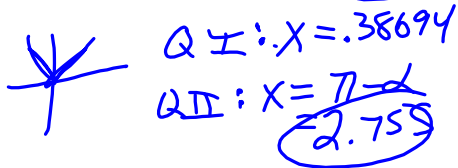
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8. $\csc x = 2.65$

$$\sin x = \frac{1}{2.65}$$

$$\alpha = \sin^{-1}\left(\frac{1}{2.65}\right)$$

$$\alpha = .38694 \dots \text{ (.387)}$$



$$\{.387, 2.755\}$$

9. $\sec^2 x = 1.245$

$$\sec x = \pm 1.11579568$$

$$\cos x = \pm \frac{1}{1.11579 \dots}$$

$$\alpha = \cos^{-1}\left(\frac{1}{1.11579}\right) = .45961 \dots$$

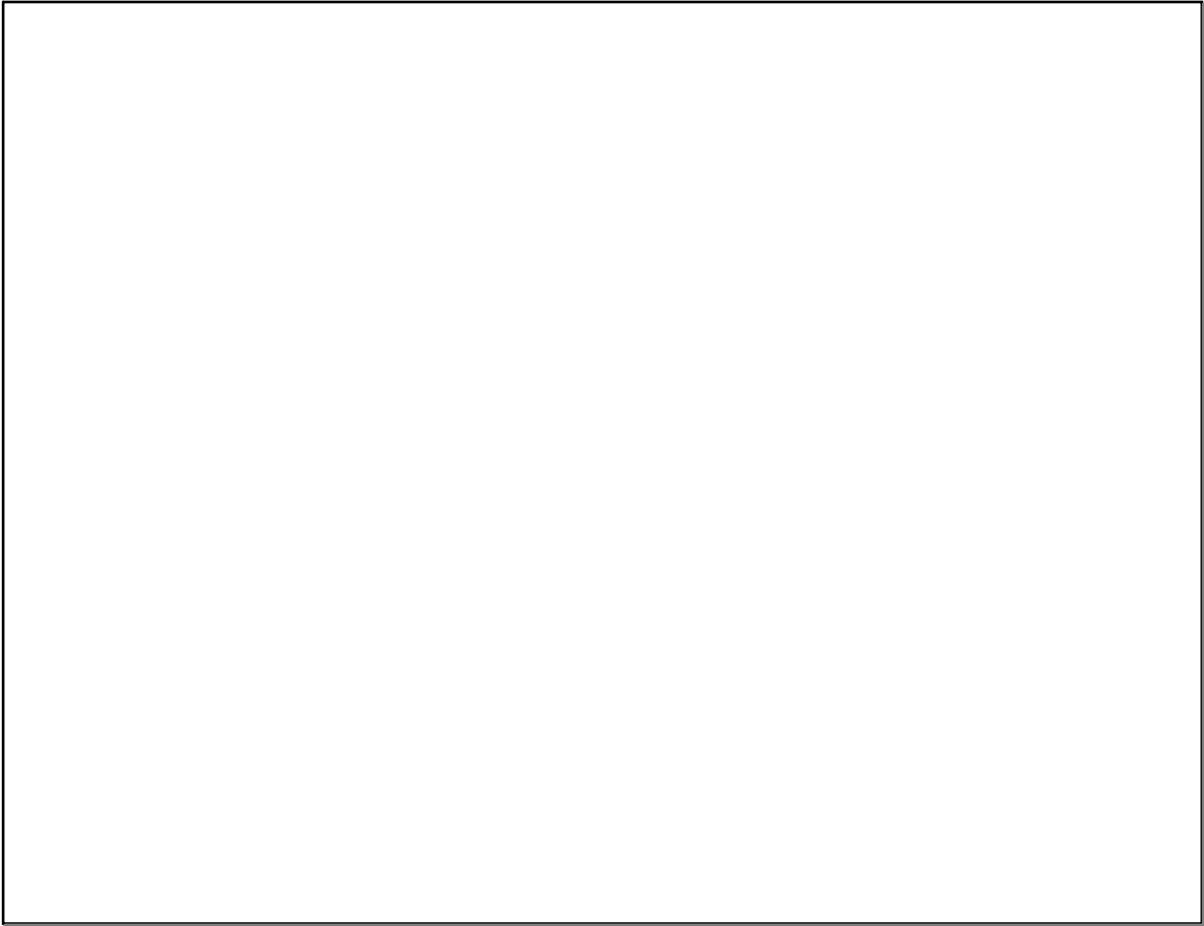


QIV: $x = 2\pi - \alpha$

$$x = 5.824$$

$$\{.460, 5.824\}$$

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Feb 1-2:12 PM