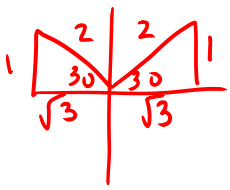
Inverse Trig Extra Practice:

Find the exact value of the function over the interval $0 \le \theta \le 360°$. I did radians, too !!

1) $2\sin\theta = 1$

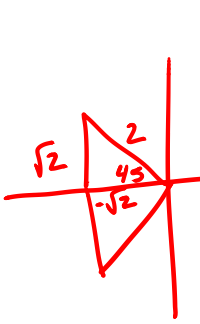
$\sin\theta = \frac{1}{2}$

30°, $\frac{\pi}{6}$
150°, $\frac{5\pi}{6}$



2) $\cos^{-1}\left(-\frac{\sqrt{2}}{2}\right) = \theta$

$\cos\theta = -\frac{\sqrt{2}}{2}$

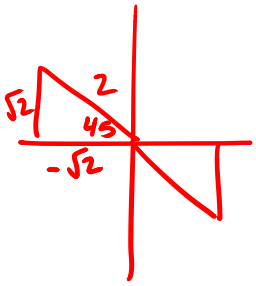


135° $\frac{3\pi}{4}$
225°, $\frac{5\pi}{4}$

3) $3\tan\theta = -3$

$\tan\theta = -1$

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



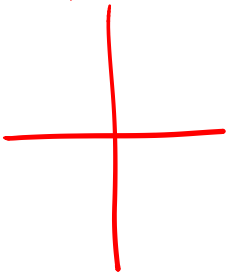
135° $\frac{3\pi}{4}$
315° $\frac{7\pi}{4}$

4) $\sin^{-1}(1) = \theta$

(0, 1)

$\sin\theta = 1$

$\sin\theta = \frac{y}{h} = \frac{1}{1}$



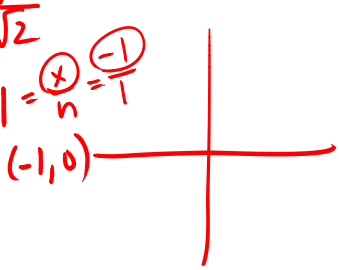
90° or $\frac{\pi}{2}$

5) $-\sqrt{2}\cos\theta = \sqrt{2}$

$\cos\theta = \frac{\sqrt{2}}{-\sqrt{2}}$

$\cos\theta = -1 = \frac{x}{h} = \frac{-1}{1}$

(-1, 0)

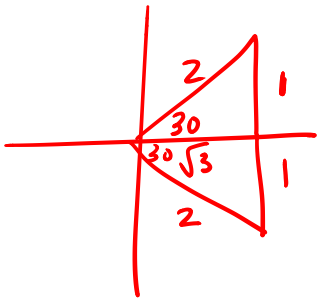


180 or π

6) $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right) = \theta$

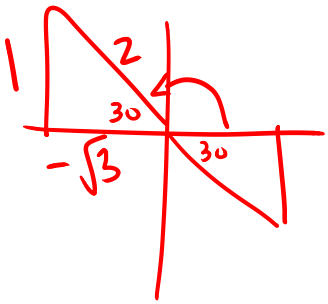
$\cos\theta = \frac{\sqrt{3}}{2}$

30°, 330°
$\frac{\pi}{6}$, $\frac{11\pi}{6}$



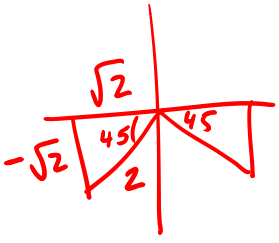
7) $3\tan\theta = -\sqrt{3}$

$\tan\theta = -\frac{\sqrt{3}}{3} = \frac{1}{-\sqrt{3}}$



150°, $\frac{5\pi}{6}$
330°, $\frac{11\pi}{6}$

8) $\sin\theta = -\frac{\sqrt{2}}{2}$

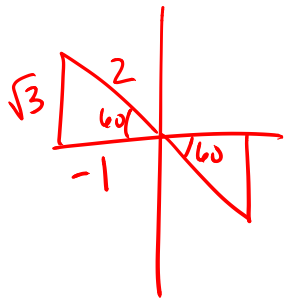


225° $\frac{5\pi}{4}$
315° $\frac{7\pi}{4}$

Find the exact value of the function over the interval $0 \le \theta \le 2\pi$. I did radians, too

1) $\arctan\left(-\sqrt{3}\right) = \theta$

$\tan\theta = -\frac{\sqrt{3}}{1}$



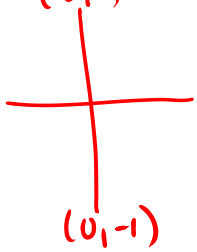
120° $\frac{2\pi}{3}$
300° $\frac{5\pi}{3}$

2) $\cos\theta = \frac{2}{1}$

No angle

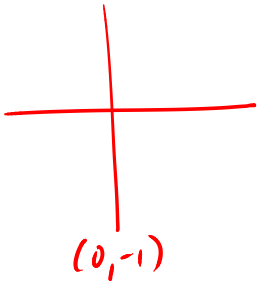
3) $\cos^{-1}(0) = \theta$

$\cos\theta = 0 = \frac{a}{h} = \frac{0}{1}$



90° $\frac{\pi}{2}$
270° $\frac{3\pi}{2}$

4) $\sin\theta = -1 = \frac{opp}{hyp} = \frac{-1}{1}$

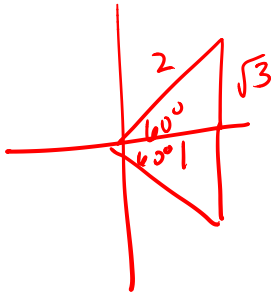


270° or $\frac{3\pi}{2}$

5) $2\cos\theta = 1$

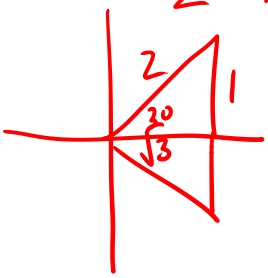
$\cos\theta = \frac{1}{2}$

60°, $\frac{\pi}{3}$
300°, $\frac{5\pi}{3}$



6) $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right) = \theta$

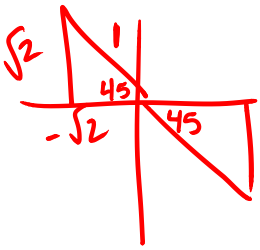
$\cos\theta = \frac{\sqrt{3}}{2} = \frac{x}{h}$



30° or 330°
$\frac{\pi}{6}$ or $\frac{11\pi}{6}$

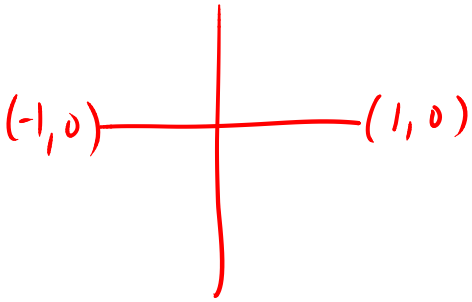
7) $\arctan(-1) = \theta$

$\tan\theta = -1$



135° $\frac{3\pi}{4}$
315° $\frac{7\pi}{4}$

8) $\tan\theta = 0 = \frac{y}{x} = \frac{0}{1 \text{ or } -1}$



0, 180°, 360°
0, π, 2π