

# Calculus Honors

## Trig Review HW

Find the reference angle for each of the following:

1.  $\frac{4\pi}{7} = \frac{3\pi}{7}$

4.  $\frac{7\pi}{6} = \frac{\pi}{6}$

2.  $-150^\circ = 30^\circ$

5.  $312^\circ = 48^\circ$

3.  $2.674 = \pi - 2.674$   
 $\text{II} \quad .468$

6.  $4.829 = 2\pi - 4.829$   
 $\text{IV} \quad 1.454$

Find the indicated value(s):

7.  $\sin^{-1}(.278), [0, 2\pi)$   $\text{I}, \text{II} \quad .282, 2.860$

8.  $\sec x = -2.681, [0, 2\pi)$

$\cos \theta = -.3729..$

$\text{II} \quad \text{III}$   
 $1.953 \quad 4.330$

ref  $\angle = 1.1885...$

Solve each of the following equations on the interval  $[0, 2\pi)$ .

9.  $2\sin^2 x + \sin x = 1$

9)  $2\sin^2 x + \sin x - 1 = 0$   
 $(2\sin x - 1)(\sin x + 1) = 0$

10.  $\sec^2 x + 2\tan x - 4 = 0$

$\sin x = \frac{1}{2}, \sin x = -1$

11.  $2\cos^2 x - 3\cos x - 2 = 0$

$x = \frac{\pi}{6}, \frac{5\pi}{6}, \frac{3\pi}{2}$

12.  $\cos^2 x + 2\sin x + 2 = 0$

10)  $\tan^2 x + 1 + 2\tan x - 4 = 0$

$\tan^2 x + 2\tan x - 3 = 0$

$(\tan x + 3)(\tan x - 1) = 0$

$\tan x = -3 \quad \tan x = 1$

$\text{II} \quad \text{IV}$

$1.893 \quad 5.034$

$\text{I} \quad \text{III}$   
 $\frac{\pi}{4} \quad \frac{3\pi}{4}$

$$11. 2\cos^2 x - 3\cos x - 2 = 0$$

$$(2\cos x + 1)(\cos x - 2) = 0$$

$$\cos x = -\frac{1}{2} \quad \cos x = 2$$

$$\begin{array}{cc} \text{II} & \text{III} \\ 5\pi/6 & 7\pi/6 \end{array}$$

$\phi$

$$12. 1 - \sin^2 x + 2\sin x + 2 = 0$$

$$-\sin^2 x + 2\sin x + 3 = 0$$

$$-(\sin^2 x - 2\sin x - 3) = 0$$

$$(\sin x + 1)(\sin x - 3) = 0$$

$$\sin x = -1 \quad \sin x = 3$$

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

$\phi$