

**QUIZ 2: CIRCLE TRIG, SPECIAL ANGLES AND RECIPROCAL FUNCTIONS**

(1 mark each)

1. Find each value to 3 decimal places:

(a)  $\sec 52^\circ = 1.624$

(b)  $\cot 158^\circ = -2.475$

(c)  $\csc\left(\frac{5\pi}{8}\right) = 1.082$

(d)  $\sec(-246^\circ) = -2.459$

2. Solve for  $\theta$  to the nearest degree ( $0 \leq \theta < 90^\circ$ )

(a)  $\cot \theta = 0.638$

$\theta = \tan^{-1}\left(\frac{1}{0.638}\right)$

$\theta = 57^\circ$

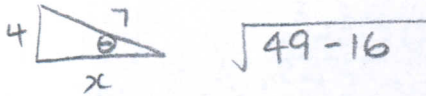
(b)  $\csc \theta = 2.136$

$\theta = \sin^{-1}\left(\frac{1}{2.136}\right)$

$\theta = 28^\circ$

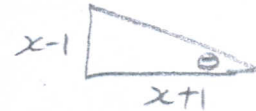
3. Find the exact values for the primary trig ratios for each acute angle:

(a)  $\csc \theta = \frac{7}{4}$       $\sin \theta = \frac{4}{7}$  hyp.



$\cos \theta = \frac{\sqrt{33}}{7}$

(b)  $\cot \theta = \frac{x+1}{x-1}$



$\sqrt{(x-1)^2 + (x+1)^2}$   
 $\sqrt{x^2 - 2x + 1 + x^2 + 2x + 1}$

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

4. Find the exact value of each ratio:

(a)  $\cos\left(\frac{\pi}{4}\right)$

$\frac{1}{\sqrt{2}}$

(b)  $\csc\left(\frac{\pi}{6}\right)$

$\sin \frac{\pi}{6}$   
 2

(c)  $\tan\left(\frac{\pi}{3}\right)$

$\sqrt{3}$

(d)  $\cot\left(\frac{3\pi}{4}\right)$

$\tan \frac{3\pi}{4}$   
 -1

(e)  $\sin\left(\frac{5\pi}{4}\right)$

$-\frac{1}{\sqrt{2}}$

(f)  $\sec\left(\frac{-\pi}{3}\right)$

2

(g)  $\tan\left(\frac{5\pi}{6}\right)$

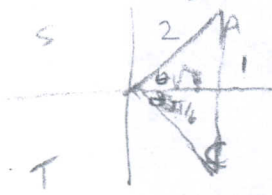
$-\frac{1}{\sqrt{3}}$

(h)  $\csc\left(\frac{11\pi}{6}\right)$

-2

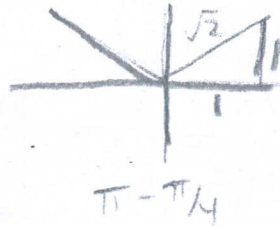
5. Solve  $x$  exactly,  $0 < x < 2\pi$       2 marks each

(a)  $\cos x = \frac{\sqrt{3}}{2}$



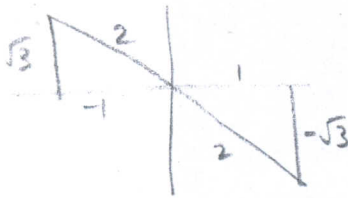
$x = \frac{\pi}{6}, \frac{11\pi}{6}$

(b)  $\sin x = \frac{1}{\sqrt{2}}$



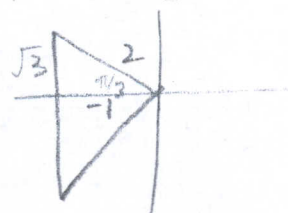
$x = \frac{\pi}{4}, \frac{3\pi}{4}$

(c)  $\tan x = -\sqrt{3}$



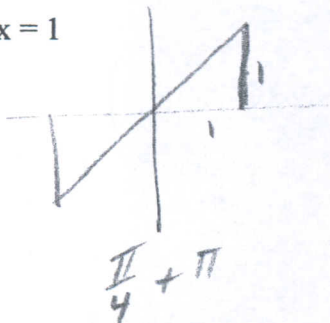
$x = \frac{2\pi}{3}, \frac{5\pi}{3}$

(d)  $\cos x = -\frac{1}{2}$



$x = \frac{2\pi}{3}, \frac{4\pi}{3}$

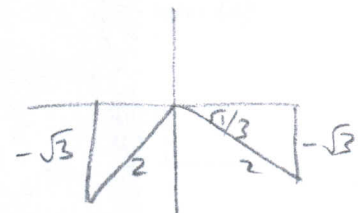
(e)  $\cot x = 1$



$x = \frac{\pi}{4}, \frac{5\pi}{4}$

(f)  $\csc x = -\frac{2}{\sqrt{3}}$

$\sin x = -\frac{\sqrt{3}}{2}$



$x = \frac{4\pi}{3}, \frac{5\pi}{3}$