

THUR 1-17-08

①

p. 37

① * MAKE SURE YOU DO THIS

STUDY
CASES!

② a) $-\cos 30^\circ = -\frac{\sqrt{3}}{2}$

b) $-\sin 45^\circ = -\frac{\sqrt{2}}{2}$

c) $\cos 45^\circ = \frac{\sqrt{2}}{2}$

d) 0

e) $-\cos 60^\circ = -\frac{1}{2}$

f) $-\tan 30^\circ = -\frac{1}{\sqrt{3}}$

g) $-\sin 60^\circ = -\frac{\sqrt{3}}{2}$

h) $\cos 60^\circ = \frac{1}{2}$

i) $-\tan 45^\circ = -1$

j) $\cos 90^\circ = 0$

k) $-\sin 60^\circ = -\frac{\sqrt{3}}{2}$

l) $-\sin 45^\circ = -\frac{\sqrt{2}}{2}$

$$\begin{aligned} \textcircled{3} \text{ A) } \frac{\csc \theta}{\sec \theta} &= \frac{\csc \theta}{\sec \theta} \\ &= \frac{\frac{1}{\sin \theta}}{\frac{1}{\cos \theta}} \\ &= \frac{1}{\sin \theta} \cdot \frac{\cos \theta}{1} \\ &= \frac{\cos \theta}{\sin \theta} \\ &= \cot \theta \end{aligned}$$

$$\begin{aligned} \textcircled{3} \text{ C) } \cos^2 \alpha (1 + \tan^2 \alpha) &= \cos^2 \alpha (1 + \tan^2 \alpha) \\ &= \cos^2 \alpha \left(1 + \frac{\sin^2 \alpha}{\cos^2 \alpha} \right) \\ &= \cos^2 \alpha + \sin^2 \alpha \\ &= \underline{\underline{1}} \end{aligned}$$

CHAP. 5 ☺ REDO TRIG IN DEGREES

☺ APPLICATION PROBLEMS ✓

YOUR SUCCESS IS BASED UPON:

☺ REMEMBERING PREVIOUS TRIG

☺ UNIT CIRCLES VALUES IN DEGREES

☺ STATING THE IDENTITIES

☺ ALGEBRA SKILLS

☺ CALCULATOR SKILLS

☺ WORK ETHIC



ALL
OR
NONE
QUIZ!

$$\text{Ex) } \sin 40^\circ 30' = ?$$

↓
DEC. DEG.

$$= \sin\left(40 + \frac{30}{60}\right)$$

$$\sin 40^\circ 30' = \underline{\underline{.6494}}$$

$$\text{Ex) } \cos 28^\circ 17' = ?$$

$$\underline{\underline{.8806}}$$

$$\text{Ex) } \tan 47^\circ 15' 37'' = ?$$

$$\underline{\underline{= 1.0822}}$$

1.1 DEG AUTO REAL	
$\sin\left(40 + \frac{30}{60}\right)$	$\sin\left(\frac{81}{2}\right)$
$\sin\left(40 + \frac{30}{60}\right)$	.649448
2/99	

1.1 DEG AUTO REAL	
$\sin\left(40 + \frac{30}{60}\right)$	.649448
$\cos\left(28 + \frac{17}{60}\right)$	.880615
$\cos\left(28 + \frac{17}{60}\right)$	.880615
4/99	

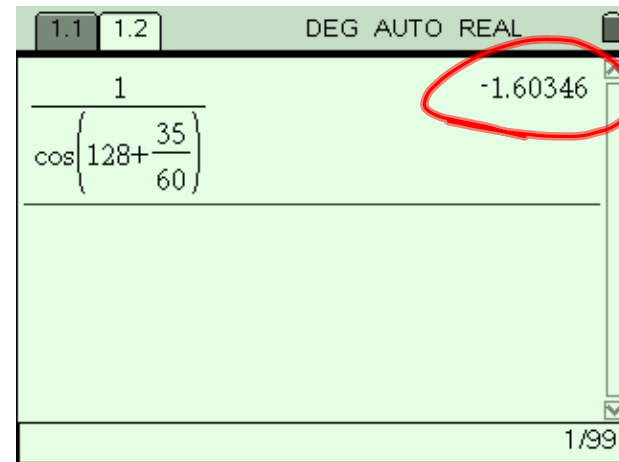
1.1 DEG AUTO REAL	
$\cos\left(28 + \frac{17}{60}\right)$	.880615
$\cos\left(28 + \frac{17}{60}\right)$	.880615
$\tan\left(47 + \frac{15}{60} + \frac{37}{3600}\right)$	1.08218
5/99	

$$\text{Ex) } \sec 128^{\circ} 35' = ?$$

~~NOT~~
 $\cos^{-1} \neq \sec$

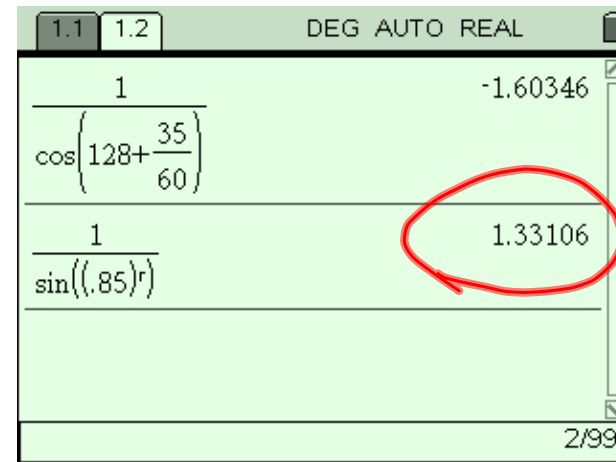
$$= \frac{1}{\cos 128^{\circ} 35'}$$

$$\doteq \underline{\underline{-1.6035}}$$



$$\text{Ex) } \csc .85^{\text{R}} = ?$$

$$\doteq \underline{\underline{1.3311}}$$



Ex) FIND θ TO THE NEAREST MINUTE

$\sin \theta = .7108$

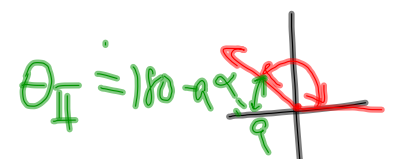
$0^\circ \leq \theta < 360^\circ$

2 SOLNS: θ_I, θ_{II}

$\theta = \sin^{-1}(.7108)$

$-\frac{\pi}{2} \leq \sin^{-1} \leq \frac{\pi}{2}$
 $-90^\circ \leq \dots \leq 90^\circ$

$\theta_I = 45^\circ 18'$



$\theta_{II} = 134^\circ 42'$

CHECK

DEG AUTO REAL	
$\sin^{-1}(.7108)$	45.3
$45.300042856263 \rightarrow a$	45.3
$45.300042856263 - 45$	.300043
$.300042856263 \cdot 60$	18.0026

DEG AUTO REAL	
$45.300042856263 \rightarrow a$	45.3
$45.300042856263 - 45$	.300043
$.300042856263 \cdot 60$	18.0026
$180 - a$	134.7
$134.69995714374 - 134$	.699957
$.69995714374 \cdot 60$	41.9974

DEG AUTO REAL	
$180 - a$	134.7
$134.69995714374 - 134$	.699957
$.69995714374 \cdot 60$	41.9974
$\sin(134.7)$	.710799
$\sin(a)$	.7108
$\sin(134.69995714374)$	.7108

Ex) $\sec \theta = 3.4$ Find θ : $0^\circ \leq \theta < 360^\circ$

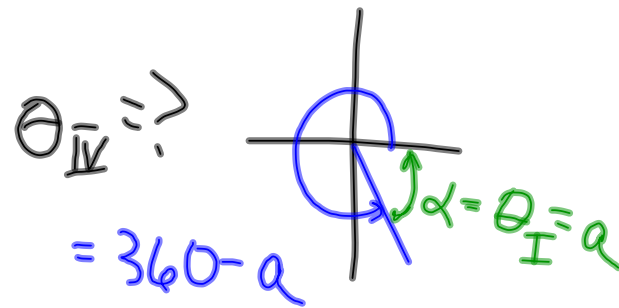
$$\frac{1}{\cos \theta} = 3.4$$

$$\cos \theta = \frac{1}{3.4}$$

$$\theta = \cos^{-1}\left(\frac{1}{3.4}\right)$$

$$\theta_I = 72^\circ 54'$$

↓
ALSO REF. \angle



$$\theta_{IV} = 287^\circ 6'$$

1.1	1.2	1.3	1.4	DEG AUTO REAL
$\cos^{-1}\left(\frac{1}{3.4}\right)$				72.8954
72.895364823356 $\rightarrow a$				72.8954
72.895364823356 - 72				.895365
.895364823356 * 60				53.7219
				4/99

1.1	1.2	1.3	1.4	DEG AUTO REAL
72.895364823356 $\rightarrow a$				72.8954
72.895364823356 - 72				.895365
.895364823356 * 60				53.7219
360 - a				287.105
287.10463517664 - 287				.104635
.10463517664 * 60				6.27811
				7/99

O.T.L.

- ☺ CORRECT TODAY'S O.T.L.
- ☺ P.37: 4, 17-24, 3B, 3D
- ☺ KNOW UNIT VALUES & IDENTITIES
IN DEGREES