Mth 113 Tuesday 2-19-13 Class Notes
(week #7)

Ch 1-4 Intro. to Trigonometric Equations

Trig. Eq. ⇒ → Identities (true for all allowed values of ind. var.)
→ Condition (only true for some allowed values of ind. var.)

Examples, simplifying trig. identities, Pg 29-30

1-4A ① $\csc\theta \sin\theta$

② $\dfrac{1-\csc\theta}{\csc\theta}$

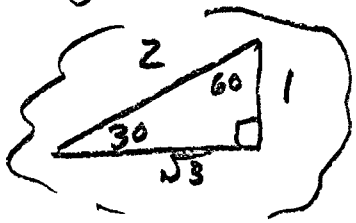
1-4b ① $\cot\alpha(\sin\alpha - \tan\alpha)$

② $\sec\theta(\cos\theta - \cot\theta)$

1-4c ① $\dfrac{1}{\sec^2\theta} + \dfrac{1}{\csc^2\theta}$

② $1-\sin^2\beta$

"Conditional" Equation Examples, Pg. 31 & 32:



* Ex-1-4d Solve to nearest .1

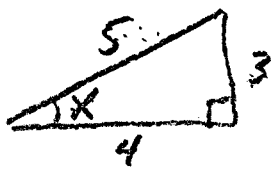
① $2\sin X = 1$

$\sin X = \frac{1}{2}$ $\therefore X = \sin^{-1}\left(\frac{1}{2}\right)$

$\therefore \boxed{X = 30^\circ}$

② $5\sin X = 3$ * 🖩

$\sin X = \frac{3}{5}$ $\therefore X = \sin^{-1}\left(\frac{3}{5}\right) = 36.9^\circ$



* Textbook NOTE
"CS-1" means see "calculator steps #1" on next page.

** Ck. "degree" mode!

③ $\sin 5X = 0.8$

$\sin^{-1}(.8) = 5X$

$\frac{\sin^{-1}(.8)}{5} = X$

🖩 $\frac{53.130}{5} = X$

$\boxed{10.6^\circ = X}$

④ $4\cos 3\alpha = 3$

$$\cos^{-1}\left(\frac{3}{4}\right) = 3\alpha$$

$$\frac{\cos^{-1}\left(\frac{3}{4}\right)}{3} = \alpha$$

$$\frac{41.4096}{3} = \boxed{\alpha \approx 13.8^\circ}$$