MTh 113 Thursday 1-10-13 CLASS NOTES

⑤ $\sec\theta(\cot\theta + \cos\theta - 1)$

$\frac{1}{\cos\theta}\left(\frac{\cos\theta}{\sin\theta} + \cos\theta - 1\right)$

$\csc\theta + 1 - \sec\theta$

⑧ $\dfrac{\sin\theta + \cos\theta - 2}{\cos\theta}$

$\frac{\sin\theta}{\cos\theta} + \frac{\cos\theta}{\cos\theta} - \frac{2}{\cos\theta}$

$\tan\theta + 1 - 2\sec\theta$

Simplifying & Verifying Trig. Identities

(13) $(\cos\theta + \sin\theta)(\cos\theta - \sin\theta) + 2\sin^2\theta$

CONJUGATES

$\cos^2\theta - \sin^2\theta + 2\sin^2\theta$

$\cos^2\theta + \sin^2\theta$

$\boxed{1}$

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(12) $-\sin\theta(\sin\theta - \csc\theta)$

$-\sin^2\theta + \sin\theta \cdot \frac{1}{\sin\theta}$

$-\sin^2\theta + 1$

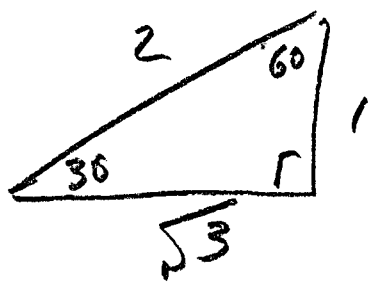
$1 - \sin^2\theta$

$\Rightarrow \boxed{\cos^2\theta}$

$\sin^2\theta + \cos^2\theta = 1$

(26) $\sqrt{3}\tan X = 1$

$$\tan X = \frac{1}{\sqrt{3}}$$



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

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(19) $\tan X(\cot x + \csc x) = 1 + \sec x$

$$\frac{\sin X}{\cos X}\left(\frac{\cos X}{\sin X} + \frac{1}{\sin X}\right)$$

$$1 + \frac{1}{\cos X}$$

$$1 + \sec X$$

$1 + \sec X$ ✓

(22) $\dfrac{\sin x - \cos x}{\sin x} = 1 - \cot x$

$\dfrac{\sin x}{\sin x} - \dfrac{\cos x}{\sin x}$

$1 - \cot x$ | $1 - \cot x$ ✓

(23) $\cos\alpha(\csc\alpha + \sec\alpha) = \cot\alpha + 1$

$\cos\alpha\left(\dfrac{1}{\sin\alpha} + \dfrac{1}{\cos\alpha}\right)$

$\cot\alpha + 1$ | $\cot\alpha + 1$ ✓

From: "Essentials of Trig." by Drooyan

#33 pg152 $\tan^2 x + \sec^2 x = 2\sec^2 x - 1$

Using $\frac{\sin^2 x}{\cos^2 x} + \frac{\cos^2 x}{\cos^2 x} = \frac{1}{\cos^2 x}$

$\tan^2 x + 1 = \sec^2 x$

$\tan^2 x = \sec^2 x - 1$

$\therefore \sec^2 x - 1 + \sec^2 x$

$= 2\sec^2 x - 1$

$2\sec^2 x - 1$ ✓

A	α	alpha	N	ν	nu
B	β	beta	Ξ	ξ	ksi
Γ	γ	gamma	O	ο	omicron
Δ	δ	delta	Π	π	pi
E	ε	epsilon	P	ρ	rho
Z	ζ	zeta	Σ	σς	sigma
H	η	eta	T	τ	tau
Θ	θ	theta	Y	υ	upsilon
I	ι	iota	Φ	φ	phi
K	κ	kappa	X	χ	chi
Λ	λ	lambda	Ψ	ψ	psi
Mμ		mu	Ω	ω	omega