# Day 5 HW

Sunday, February 1, 2015 12:19 PM

p. 460: 5-15 (omit 8)

(5) yes $\Rightarrow f(x) = \sin x$ (6) yes $\Rightarrow f(x) = \sin x$ (7) no! (can't simplify)

(9) yes $\Rightarrow f(x) = \sin x$ (10) no $\Rightarrow$ (can't simplify)

(11) $(\cos x)(\tan x + \sin x \cot x) = \sin x + \cos^2 x$ ✓

$\cos x \tan x + \cos x \sin x \cot x$

$\cancel{\cos x} \cdot \frac{\sin x}{\cancel{\cos x}} + \cos x \cancel{\sin x} \cdot \frac{\cos x}{\cancel{\sin x}}$

$\sin x + \cos^2 x$ ✓

(12) $(\sin x)(\cot x + \cos x \tan x) = \cos x + \sin^2 x$ ✓

$\cancel{\sin x} \cdot \frac{\cos x}{\cancel{\sin x}} + \sin x \cancel{\cos x} \frac{\sin x}{\cancel{\cos x}}$

$\cos x + \sin^2 x$ ✓

(13) $(1 - \tan x)^2 = \sec^2 x - 2\tan x$ ✓

$1 - 2\tan x + \tan^2 x$

$1 + \tan^2 x - 2\tan x$

$\sec^2 x - 2\tan x$ ✓

(14) $(\cos x - \sin x)^2 = 1 - 2\sin x \cos x$ ✓

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

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

$1 - 2\sin x \cos x$ ✓

(15) $\frac{(1 - \cos u)(1 + \cos u)}{\cos^2 u} = \tan^2 u$ ✓

$= \frac{1 - \cos^2 u}{\cos^2 u}$

$= \frac{\sin^2 u}{\cos^2 u}$

$= \tan^2 u$ ✓