-0 S | A SOHCAHTOA

T | C 4/4

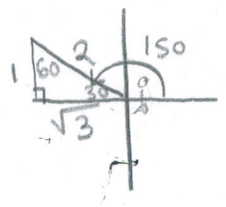
Trigonometry Name Maura Lomonte

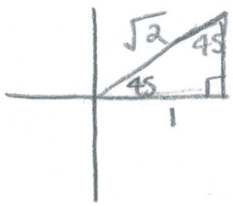
HW #17 - More Sum & Difference Date 11/17/15 Period 1

Use the angle sum or difference identity to find the exact value of each.

1) cos 195°

$\cos(150+45)$ 100%





A+

$\cos 150(\cos 45) + \sin 150(\sin 45)$

$-\frac{\sqrt{3}}{2}\left(\frac{\sqrt{2}}{2}\right) - \frac{1}{2}\left(\frac{\sqrt{2}}{2}\right)$

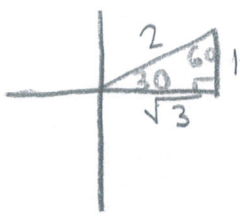
$-\frac{\sqrt{6}}{4} - \frac{\sqrt{2}}{4}$

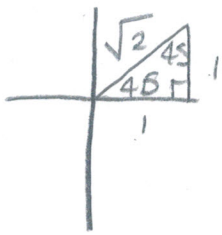
$\boxed{\frac{-\sqrt{6}-\sqrt{2}}{4}}$

Perfect!!!

2) $\tan -\frac{\pi}{12} = -15$

$\tan(30-45)$





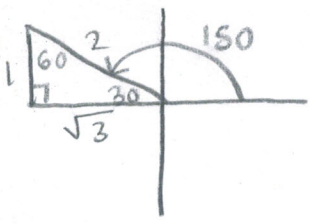
$\frac{\tan 30 - \tan 45}{1+\tan 30 \cdot \tan 45} = \frac{\frac{1}{\sqrt{3}} - 1}{1+\frac{1}{\sqrt{3}}} \cdot \frac{\left(1+\frac{1}{\sqrt{3}}\right)}{\left(1-\frac{1}{\sqrt{3}}\right)}$

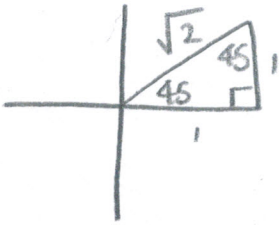
$\frac{\frac{\sqrt{3}}{3} - 1 - \frac{1}{3} + \frac{\sqrt{3}}{3}}{1 + \frac{\sqrt{3}}{3} - \frac{\sqrt{3}}{3} - \frac{1}{3}}$

$\boxed{-2+\sqrt{3}}$

3) tan 105°

$\tan(150-45)$





$\frac{\tan 150 - \tan 45}{1+\tan 150(\tan 45)} = \frac{-\frac{1}{\sqrt{3}} - 1}{1 - \frac{1}{\sqrt{3}}} \cdot \frac{\left(1+\frac{1}{\sqrt{3}}\right)}{\left(1+\frac{1}{\sqrt{3}}\right)}$

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

$\boxed{-2-\sqrt{3}}$

4) $\tan \frac{7\pi}{12} = 105$

$\tan(150-45$

$\frac{\tan 150 - 45}{1+\tan 150(\tan 45)} = \frac{-\frac{1}{\sqrt{3}} - 1}{1 - \frac{1}{\sqrt{3}}} \left(1+\frac{1}{\sqrt{}}\right)$

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

$\boxed{-\sqrt{3}-2}$