5.4 Sum & Difference Properties Day 2

Essential Question:

How do I find exact values of angles not on the unit circle?

5.4 Sum & Difference Properties Day 2

Essential Question: How do I find exact values of angles not on the unit circle?

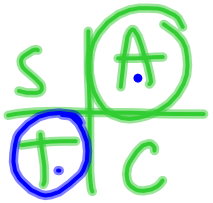
1. $\sin A = \frac{1}{2}$ (+)

$\cos A > 0$ (+) QI

$\sin B < 0$ (−) QIII

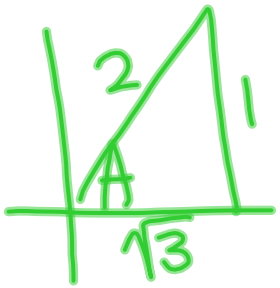
$\tan B = \frac{3}{4}$ (+)

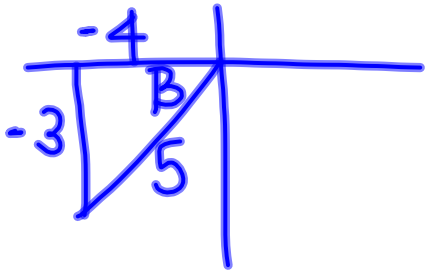
pictures!



SOH CAH TOA

Find the exact value of $\sin(A-B) = \sin A\cos B - \cos A\sin B$





$\left(\frac{1}{2}\right)\left(\frac{-4}{5}\right) - \left(\frac{\sqrt{3}}{2}\right)\left(\frac{-3}{5}\right)$

$\frac{-4}{10} + \frac{3\sqrt{3}}{10} = \boxed{\frac{-4+3\sqrt{3}}{10}}$

5.4 Sum & Difference Properties Day 2

Essential Question: How do I find exact values of angles not on the unit circle?

2. Find the exact value 30 60 45

a. $\sin 15°$

$\sin(\underset{A}{45} - \underset{B}{30})$

$\sin 45 \cos 30 - \cos 45 \sin 30$

$\frac{1}{\sqrt{2}} \cdot \frac{\sqrt{3}}{2} - \frac{1}{\sqrt{2}} \cdot \frac{1}{2}$

$\frac{\sqrt{3}}{2\sqrt{2}} - \frac{1}{2\sqrt{2}} = \boxed{\frac{\sqrt{3}-1}{2\sqrt{2}}}$

b. $\csc 15° = \frac{1}{\sin 15}$

$\boxed{\frac{2\sqrt{2}}{\sqrt{3}-1}}$

c. $\cos 75°$

$\cos(30+45)$

$\sin(90-75) = \cos 75$

$\sin 15$

$\boxed{\frac{\sqrt{3}-1}{2\sqrt{2}}}$