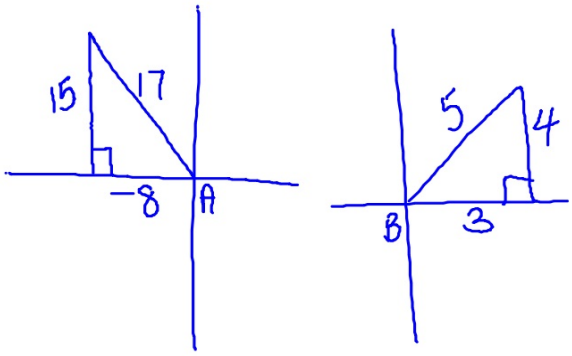
14-6: Sum and Difference Identities

trig. std. 10.0

1 Given: $\cos A = \frac{-8}{17}, \frac{\pi}{2} < A \leq \pi$ *and* $\tan B = \frac{4}{3}, 0 \leq B < \frac{\pi}{2}$

Q2 Q1

Find exact value of $\tan(A - B)$.



$$= \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

$$= \frac{\left[-\frac{15}{8} - \frac{4}{3}\right]24}{\left[1 + \left(\frac{-15}{8}\right)\left(\frac{4}{3}\right)\right]24} = \frac{-45 - 32}{24 - 60}$$

$$= \frac{77}{36}$$

2 Solve for x, if $0 \le x < 2\pi$

$$\sin\left(x + \frac{3\pi}{4}\right) + \sin\left(x - \frac{3\pi}{4}\right) = 1$$

(α = x, β = $\frac{3\pi}{4}$)

$$\frac{\sin x\cos\frac{3\pi}{4} + \cos x\sin\frac{3\pi}{4} + \sin x\cos\frac{3\pi}{4} - \cos x\sin\frac{3\pi}{4}}{2\sin x\cos\frac{3\pi}{4}} = 1$$

$$2(\sin x)\left(-\frac{\sqrt{2}}{2}\right) = 1$$

$$\sin x = \frac{1}{-\sqrt{2}}$$

Q3 Q4

225° 315°

$\frac{5\pi}{4}$, $\frac{7\pi}{4}$