Circuit Training Name: _____

11.REV.1 ~ End of Unit Review

Begin by completing the problem in cell #1. Search for your answer in the remaining cells. Put #2 in the problem blank: #_____. Work that question and proceed in this manner until you complete the circuit.

Answer: $\frac{4\sqrt{3}-3}{10}$ **# 1** Simplify; write as a single trig function: $\frac{\sin^2\theta + \tan^2\theta + \cos^2\theta}{\sec\theta}$	**Answer:** $\frac{-\sqrt{6}+\sqrt{2}}{4}$ #_____ Evaluate: $\sin\left[\cos^{-1}\frac{1}{2} + \sin^{-1}\left(-\frac{3}{5}\right)\right]$
Answer: $\frac{7\pi}{6}, \frac{11\pi}{6}, \frac{3\pi}{2}$ #_____ Solve: $2\sin^2 x - 1 = 0$	**Answer:** $\frac{\pi}{2}, \frac{3\pi}{2}, \frac{2\pi}{3}, \frac{4\pi}{3}$ #_____ Solve: $3\tan^2 x - 1 = 0$
Answer: $\sin\theta$ #_____ Simplify; write as a single trig function: $\cot\theta \sec\theta$	**Answer:** $\cot\theta$ #_____ Simplify; write as a single trig function: $\frac{\sin 2\theta}{2\sin\theta}$
Answer: $\tan\theta$ #_____ Solve: $\sqrt{3}\tan x + 1 = 0$	**Answer:** $\sec\theta$ #_____ Simplify; write as a single trig function: $\csc\theta\,(1 - \cos^2\theta)$
Answer: $\csc\theta$ #_____ Simplify; write as a single trig function: $\frac{\sec\theta}{\sin\theta} - \frac{\sin\theta}{\cos\theta}$	**Answer:** $\cos\theta$ #_____ Simplify; write as a single trig function: $\frac{\csc^2\theta}{\cot\theta} - \cot\theta$

Sketch these reference triangles:

$\sin\alpha = \frac{5}{6};\ \frac{\pi}{2} < \alpha < \pi$ $\quad$ $\tan\beta = \frac{8}{15};\ \pi < \beta < \frac{3\pi}{2}$

Answer: $\boldsymbol{\frac{240}{289}}$

#_____ Evaluate: $\cos(\alpha + \beta)$

Answer: $\boldsymbol{\frac{\pi}{2}}$

#_____ Evaluate: $\cos 2\alpha$

Answer: $\boldsymbol{\frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}}$

#_____ Solve: $4\sin^2 x + 4\cos x - 5 = 0$

Answer: $\boldsymbol{\frac{5\pi}{6}, \frac{11\pi}{6}}$

#_____ Solve: $\tan x + \sqrt{2}\tan x \cos x = 0$

Answer: $\boldsymbol{\frac{15\sqrt{11}+40}{102}}$

#_____ Evaluate: $\sin(\alpha - \beta)$

Answer: $\boldsymbol{-\frac{7}{18}}$

#_____ Evaluate: $\sin 2\beta$

Answer: $\boldsymbol{\frac{\pi}{3}, \frac{5\pi}{3}}$

#_____ Solve: $\cos 2x + 4\sin^2 x + 3\sin x = 0$

Answer: $\boldsymbol{\frac{-75-8\sqrt{11}}{102}}$

#_____ Evaluate: $\cos\left(\frac{3\pi}{4} - \frac{\pi}{6}\right)$

Answer: $\boldsymbol{\frac{3\pi}{4}, \frac{5\pi}{4}, 0, \pi, 2\pi}$

#_____ Solve: $2\cos^2 x + \cos x = 0$