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ctice

Name: KEY

Date: _____ Period: _____

Solve each equation over the interval $[0, 2\pi)$. If necessary, round answers to the nearest hundredths.

1.) $6\sin^2 x - 3 = 2\sin^2 x$

$4\sin^2 x = 3$

$\sqrt{\sin^2 x} = \sqrt{\frac{3}{4}}$

$\sin x = \pm\frac{\sqrt{3}}{2}$

$x = \pi/3, 2\pi/3, 4\pi/3, 5\pi/3$

2.) $3\cos x - 5 = 7\cos x - 4$

$-1 = 4\cos x$

$\cos x = -1/4$

$x' = 1.32$

S | A

T | C

$x = 1.82, 4.46$

3.) $\cot x - 2 = 0$

$\cot x = 2$

$\tan x = 1/2$

$x' = .46$

S | A

T | C

$x = .46, 3.61$

4.) $5\csc^2 x - 1 = 4$

$5\csc^2 x = 5$

$\sqrt{\csc^2 x} = \sqrt{1}$

$\csc x = \pm 1$

$x = \pi/2, 3\pi/2$

5.) $5\tan x = 3\tan x$

$2\tan x = 0$

$\frac{y}{x} \quad \tan x = 0$

$x = 0, \pi$

6.) $-3\sec^2 x + 4 = -2$

$-3\sec^2 x = -6$

$\sqrt{\sec^2 x} = \sqrt{2}$

$\sec x = \pm\sqrt{2}$

$x = \pi/4, 3\pi/4, 5\pi/4, 7\pi/4$

Solve each equation over the interval $[0°, 360°)$. If necessary, round answers to the nearest hundredths.

7.) $\tan^2 x - 3 = 0$

$\sqrt{\tan^2 x} = \sqrt{3}$

$\tan x = \pm\sqrt{3}$

$x = 60°, 120°, 240°, 300°$

8.) $20\sin x + 1 = 3$

$20\sin x = 2$

$\sin x = 1/10$

$x' = 5.74°$

S	A
T	C

$x = 5.74°, 174.26°$

9.) $\cos x - 7 = 0$

$\cos x = 7$

No solution

10.) $8\tan x + 13 = 3\tan x + 2$

$5\tan x = -11$

$\tan x = -11/5$

$x' = 65.56°$

S	A
T	C

$x = 114.44°$ & $294.44°$

11.) $\sin x - 3 = 5\sin x$

$-3 = 4\sin x$

$\sin x = -3/4$

$x' = 48.59°$

S	A
T	C

$x = 228.59°$ & $311.41°$

12.) $3\sec^2 x - 4 = 0$

$\sqrt{\sec^2 x} = \sqrt{\frac{4}{3}}$

$\sec x = \pm\frac{2}{\sqrt{3}}$

$\cos x = \pm\frac{\sqrt{3}}{2}$

$x = 30°, 150°, 210°, 330°$