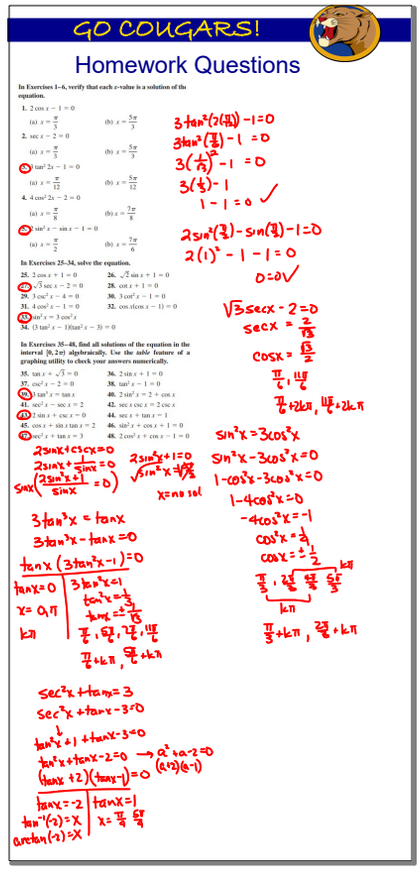

Feb 2-9:51 PM

5.3 Solving Trig Equations Day 2

Multiple Angles Problems

Feb 26-6:57 AM

We will use the domain [0, 2π)

1. $\cos 2x = 0$

$\frac{2x}{2} = \frac{\pi}{2}, \frac{3\pi}{2}, \frac{5\pi}{2}, \frac{7\pi}{2}$ $\Big)\frac{1}{2}$

set 1, set 1 + 2π

$x = \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}$

2. $\frac{2\sin^2 2x}{2} = \frac{1}{2}$

$\sin^2 2x = \frac{1}{2}$

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

$\frac{1}{2}\left(\frac{2x}{2} = \frac{\pi}{4}, \frac{3\pi}{4}, \frac{5\pi}{4}, \frac{7\pi}{4}, \frac{9\pi}{4}, \frac{11\pi}{4}, \frac{13\pi}{4}, \frac{15\pi}{4}\right)$

set 1, set 2, +2π

$x = \frac{\pi}{8}, \frac{3\pi}{8}, \frac{5\pi}{8}, \frac{7\pi}{8}, \frac{9\pi}{8}, \frac{11\pi}{8}, \frac{13\pi}{8}, \frac{15\pi}{8}$

Feb 16-1:15 PM

3. $2\sin 3x = \sqrt{3}$

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

$3x = \frac{\pi}{3}, \frac{2\pi}{3}, \frac{7\pi}{3}, \frac{8\pi}{3}, \frac{13\pi}{3}, \frac{14\pi}{3}$

set 1, set 2, set 3, 2π, 2π

$x = \frac{\pi}{9}, \frac{2\pi}{9}, \frac{7\pi}{9}, \frac{8\pi}{9}, \frac{13\pi}{9}, \frac{14\pi}{9}$

4. $\tan\frac{x}{2} = 1$

$2\left(\frac{x}{2} = \frac{\pi}{4}, \frac{5\pi}{4}\right)$

$x = \frac{2\pi}{4}, \frac{10\pi}{4}$

$x = \frac{\pi}{2}, \frac{5\pi}{2}$

Feb 26-6:59 AM

Solve over [0, 2π).

calculator

5. $4\sin x = \cos x - 2$

Y_1 Y_2

intersect

x-coordinate

$x = 3.89, 6.02$

6. $y = \cos x$

$y = x + x^2$

Y_1, Y_2] intersect

$x = 0.55$

Feb 26-7:01 AM

HOMEWORK

p 376 49, 52 (no calc)

53-59 (calc)

63-71 odd,

77-87 odd (calc)

Feb 2-9:51 PM