Advanced Math

5-3

(Day 2)

Solving Trigonometric Equations

Use a graphing calculator to approximate the solutions of the equations in the interval [0, 2π).
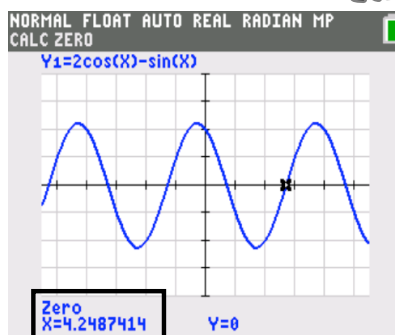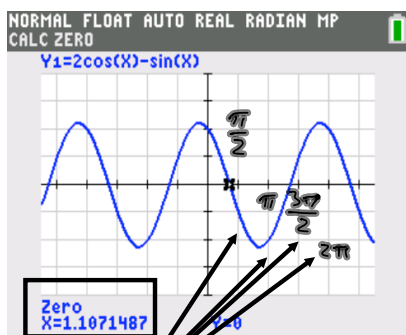
Zoom Trig

Compare graphing to an analytic solution.

43) 2 cos x - sin x = 0

$$2\cos x = \sin x$$

$$2 = \frac{\sin x}{\cos x}$$

$$2 = \tan x$$

$$\tan^{-1}(2) = x$$

NORMAL FLOAT AUTO REAL RADIAN MP
CALC ZERO
Y1=2cos(X)-sin(X)

$\frac{\pi}{2}$

π $\frac{3\pi}{2}$

2π

Zero
X=1.1071487   Y=0

NORMAL FLOAT AUTO REAL RADIAN MP
CALC ZERO
Y1=2cos(X)-sin(X)

Zero
X=4.2487414   Y=0

Keep in mind when dividing, the domain is compromisied. Answers must be checked vs new domain.

$$\{1.107 + \pi n, n \in \mathbb{Z}\}$$

$$\{1.107, 4.429\}$$

Zoom - Trig sets the x-scale to multiples of π/2.

Assignment:
pg. 472
44-56 even,
63-65 all.