Practice Test 3. Trig Equations

Text: Ch. 6, 7

Last Name	First Name	Date

This assignment is closed books, closed notes.

All your scratch work will be collected with the test and discarded.

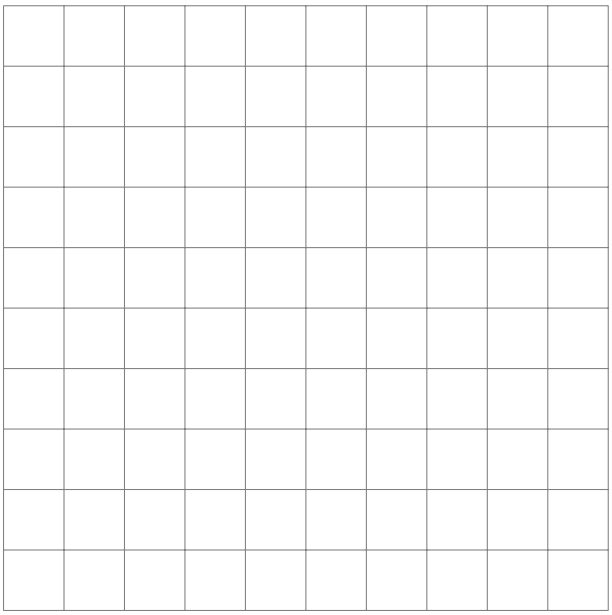
All electronic devices besides trig-capable nongraphing calculators are prohibited.

Fully justify your answers and show all work
in order to maximize your partial credit.

Leave your answers with simplified radicands and fractions in lowest terms.

Do not round anything unless directed.

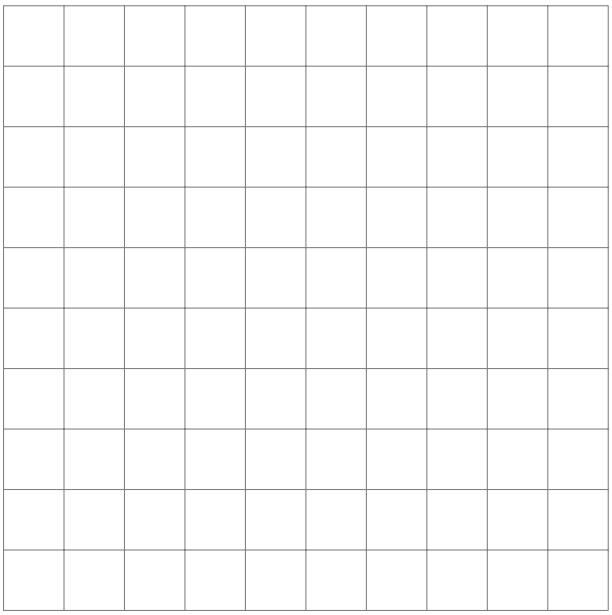
1 (5 points). Plot $y = \cos^{-1}(x)$



Domain:

Range:

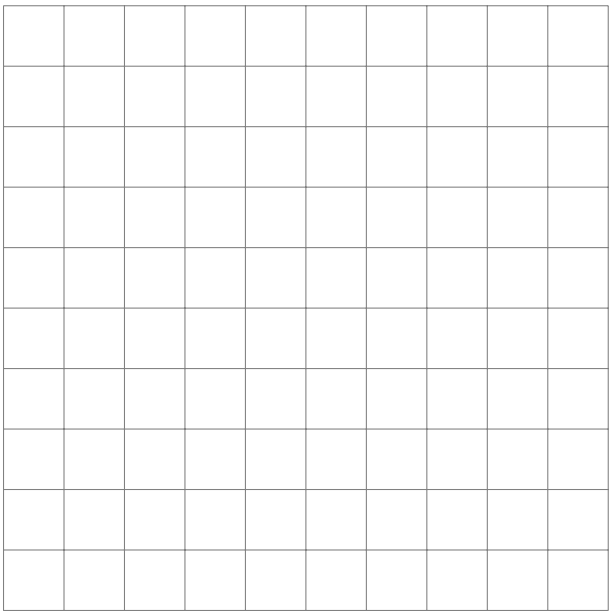
2 (5 points). Plot $y = \sin^{-1}(x)$



Domain:

Range:

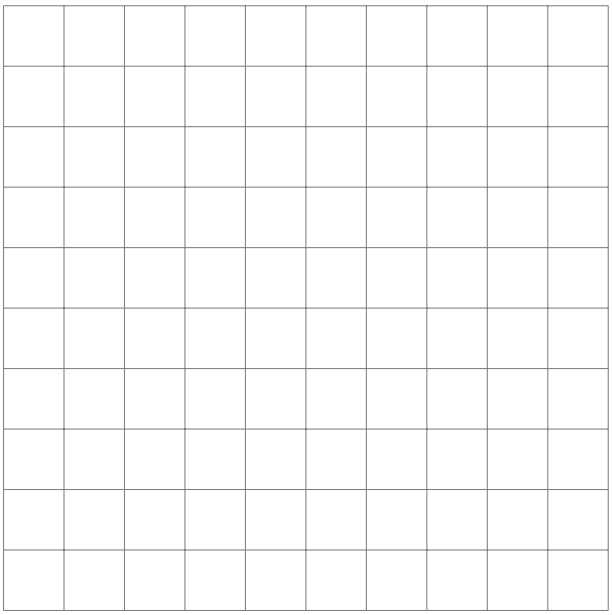
3 (5 points). Plot $y = \cot^{-1}(x)$



Domain:

Range:

4 (5 points). Plot $y = 2\tan^{-1}(x-1)$



Domain:

Range:

5 (10 points). Solve the equation. Do not round anything.

$$2\cos(x) + 7 = 6$$

Solution set:

All solution(s) in the interval $[0, 2\pi]$:

6 (10 points). Solve the equation. Round your answers to 3 significant digits.

$$3\tan(x) = 3 + \tan(x)$$

Solution set:

All solution(s) in the interval $[0, 2\pi]$:

7 (10 points). Solve the equation. Do not round anything.

$$3\csc^2(x) = 4$$

Solution set:

All solution(s) in the interval $[0, 2\pi]$:

8 (10 points). Solve the equation. Round your answers to 3 significant digits.

$$10\sin(x/3) = 1$$

Solution set:

All solution(s) in the interval $[0, 2\pi]$:

9 (10 points)**.** Simplify each expression by rewriting it without trig. State the domain of the given function.

(a) $\sin(\sin^{-1}(y))$

Simplified expression: Domain:

(b) $\cot(\cos^{-1}(x))$

Simplified expression: Domain:

10 (5 points)**.** Apply trigonometric identities one by one to the left side of the equation until it turns into the right side.

$$\sec(-x) - \sin\left(\frac{\pi}{2} - x\right) = \tan(x)\sin(x)$$

11 (5 points)**.** Apply trigonometric identities one by one to the left side of the equation until it turns into the right side.

$$\cos(4x) = 1 - 8\sin^2(x)\cos^2(x)$$

TOTAL POINTS: 80