# Math 112: Quiz 5.4, 5.5 C:

1. Match each equation with its graph. All graphs have the same axes. (3 points)

a. $y = 1 - \dfrac{3}{2}\sec(\dfrac{3x}{2})$ _____

b. $y = 2\csc(\dfrac{\pi x}{2})$ _____

c. $y = -1 + \dfrac{1}{2}\csc(x)$ _____

d. $y = \dfrac{2}{3}\tan(\dfrac{x}{2})$ _____

e. $y = \tan(\dfrac{\pi x}{3})$ _____

f. $y = 2\cot(x)$ _____

I.

II.

III.

IV.
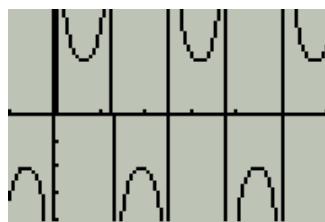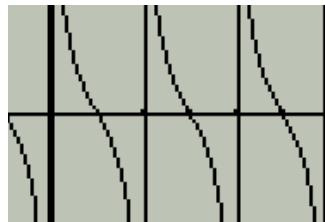
V.
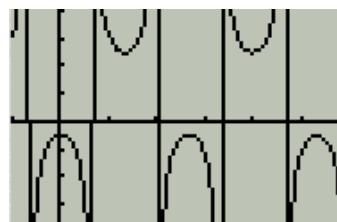
VI.
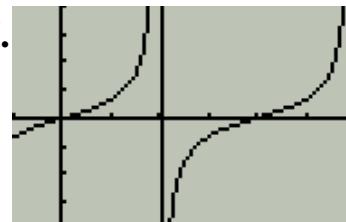
2. For the following function, sketch the graph carefully over one period, and label the *x* and *y* axes, and any *x* or *y* intercepts. (2 points)

$$f(x) = -\tan\left(x - \dfrac{\pi}{2}\right)$$

1. State the Domain and Range of the inverse tangent function. Sketch the graphs of both the tangent function and the inverse tangent function to illustrate your answer.

2. Find the exact values for each of the following.

   a. arctan(1)

   b. $\tan^{-1}(\tan(\frac{7\pi}{6}))$

   c. $\cos(\sin^{-1}(\frac{\sqrt{3}}{2}))$

5. a. For what values of x is $\tan(\tan^{-1}x) = x$?

   b. For what values of x is $\tan^{-1}(\tan x) = x$?