* 1. **Recitation Activity**

1. What is the difference between , sin , and ?

2. (Yoshiwara 5.3) Which of the following are true for all θ?

1. sin 2θ = 2 sinθ
2. sin ( + sin θ
3. tan(
4. sin θ + cos θ = 1
5. tan θ + = sinθ cosθ
6. =

3. (FM 11.3 and S-Z 10.4) Find the exact value without a calculator:

a. 3

b. - 6

c. 2sin (-

c. sin (do in 2 ways)

d. tan (do in 2 ways)

e. sec ( )

4. (FM 11.3) Find each of the following using the given information:

a. sin(α + β), given sin α = (0 < α < ) and cos β = - (π < β < )

b. tan( α – β), given cos α = (0 < α < ) and cos β = - ()

c. cos ( α + β), given cosα = () and tan β = ()

5. (S-Z 10.4) For each of the following, find the exact values of sin(2θ), cos(2θ), tan(2θ), sin(), cos(), and tan().

a. cscθ = 4 and θ is in QII.

b. sec θ = and θ is in QIV.

6. (S-Z 10.4)

a. If sin θ = x and θ is in QII, find cos θ and tan θ in terms of x.

b. If tan θ = x and θ is in QI, find sin(2θ) and cos(2θ) in terms of x.

c. (Yoshiwara 8.1): If cos(2x - .3) = .24 and sin(2x - .3) < 0, find cos(.3-2x).

7. (Yoshiwara 5.3 and FM 11.1) Verify that the following are true for all x:

a. (cos x – 1)(cos x + 1) = -

b. - = 1 – 2x

c. = cos x

d. = (Does “cross-multiplication” help here?)

e. tan x + sec x =

f. tan x () = cos x + sec x

g. = tan x

h. =

i. =

j. = 1 + sin(2x)

8. For each of the following, find all values of x on [0, 2π} that make the statement true:

a. sin(2x) +

b. 3