MATH 114: FALL 2021   QUIZ 2 (10PTS)
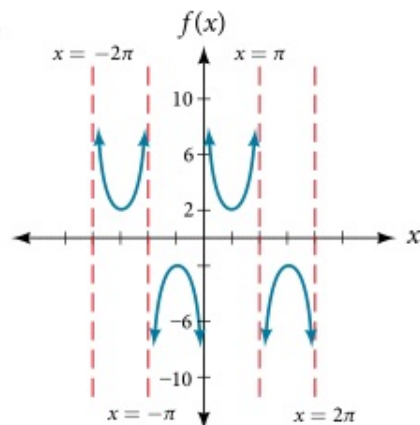
You may use your homework solutions. I need to look at your class notes while you take this. You are allowed a 3x5 inch card of formulas. Thanks! 2pts per problem, hence 2pts bonus.

Problem 1: Find the formula for $f(x)$ given the graph below:

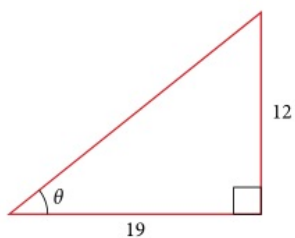*hint: the key is to understand where the vertical asymptotes come from and to note the graph does not hit y-values between $y = \pm 2$*

Problem 2: Use trigonometric identities to simplify the expression below:

$$\tan x \sin x + \sec x \cos^2 x$$

Problem 3: Use trigonometric identities to simplify the expression below:

$$\frac{1 - \cos^2 x}{\tan^2 x} + 2 \sin^2 x$$

Problem 4: Find the length of the hypotenuse and the angle θ in the triangle pictured below:

Problem 5: The line $y = -\frac{3}{7}x$ passes through the origin in the x, y-plane. What is the measure of the angle that the line makes with the negative x-axis ?

Problem 6: Find the exact value of $\cos\left(\sin^{-1}\left(\frac{1}{x}\right)\right)$ in terms of x with the help of a reference triangle.