Honors Trigonometry

Name _____

Per _____ Date _____

Copy the original problem.
Convince *me* that **you** understand the concept.
No calculators.

I Determine the exact value of the following. Reduce fully.

   Do not leave radicals in the denominator.: $\sec\left(\dfrac{-13\pi}{12}\right)$ (10 pts)

II For each of the six standard trig functions, state the domain, range, period
   and state whether the function is odd, even, or neither.   (25 pts tot)

III State the sine, cosine, and tangent "add/subtract" formulas we use in class.(15 pts tot)

IV Leaving the *LEFT SIDE UNTOUCHED,* **PROVE** the given identity.

                          (10 pts ea)

A) $\dfrac{\csc x}{2\cos x} = \csc 2x$ B) $\sec x \csc x = 2\csc 2x$

C) $\sin^2 \dfrac{x}{2} = \dfrac{1}{2}(1-\cos x)$ D) $\dfrac{3\tan x - \tan^3 x}{1 - 3\tan^2 x} = \tan 3x$

V Given $\tan x = 3$ and $\pi < x < \dfrac{3\pi}{2}$. Find $\sec 2x$.   (10 pts)

E X T R A   C R E D I T .... **5 pts** ....

   Given QB is tangent to the unit circle at B.
   The arc length PB is x. Determine the coordinates
   of *all* **5 points** indicated with letters.