Honors Trigonometry

Name _____

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

Per _____ Date _____

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

You may leave radicals in the denominator.: $\sec\left(\dfrac{-37\pi}{12}\right)$ (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) $\sec x \csc x = \tan x + \cot x$ B) $2\sin 2x \cos x = \sin 3x + \sin x$

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

V   Given $\sin x = \dfrac{-4}{5}$ and $\dfrac{3\pi}{2} < x < 2\pi.$ Find $\cot 2x.$ (10 pts)

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

Prove: $\sin 6x + \sin 2x = 2\sin 4x \cos 2x$