Honors Trigonometry
Copy original problem.
Convince *me* that **you** understand the concept!

Name _____

Per _____ Date _____

Chapter 5 Exam

I State whether there are none or one or two or more triangles possible from the given information.
Do not actually solve for *any* missing parts. You are to *include a picture* and a **brief statement** supporting your conclusion. (5 pts ea)

A) C = 130°, c = 40, b = 60

B) B = 40°, b = 10, c = 10

C) A = 50°, a = 6, b = 10

D) C = 30°, c = 25, b = 30

E) C = 30°, c = 5, b = 4

F) a = 5, b = 2, c = 8

G) A = 38°, B = 60°, C = 90°

H) C = 60°, a = 8, B = 60°

I) A = 150°, a = 60, c = 40

J) B = 95°, a = $22\sqrt{3}$, b = $22\sqrt{3}$

II You *will* solve the triangle in this section. Find all missing parts. Find area and perimeter. (20 pts tot)

Given: a = 7 b = 9 A = 35°.

III Without using a calculator, determine the following (simplify, of course). (5 pts ea)

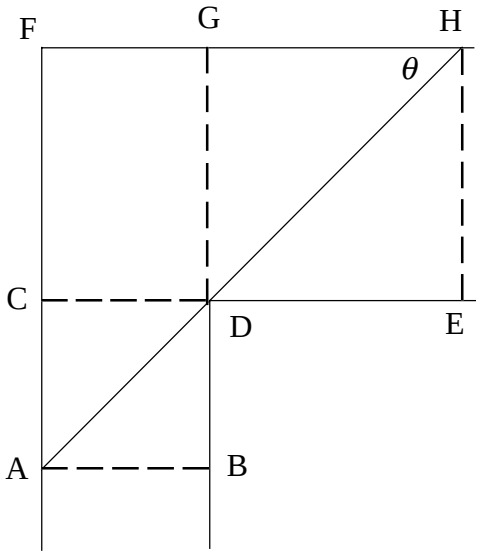
A) Given: $\sec\theta = x$. Determine $\sin 2\theta$.

B) Given: $\sec^2\theta = x$. Determine $\cos^2 2\theta + \sin^2 2\theta$.

C) Given: $\tan\theta = 2x$. Determine $\sin^2\theta$.

D) Given: $\sin\theta = \dfrac{x}{\sqrt{2 + x^2}}$. Determine $\cos\theta$.

IV Consider the figure. All lines which look parallel are parallel. All lines which look perpendicular are perpendicular. AB = 8. EH = 27. AH is a straight line which is composed of the lines AD and DH. Determine the length of the lines AD and DH. That is, find the length of AH in terms of θ. (10 pts)
(hint: Your calculator is of no help on this problem.)



Extra Credit **5 pts**

Show that the area of *any* trangle ABC can be given by: Area = $bc \sin\frac{A}{2}\cos\frac{A}{2}$