MATH 113 SPRING 2000 - ROSAY

Rosay Ex.2

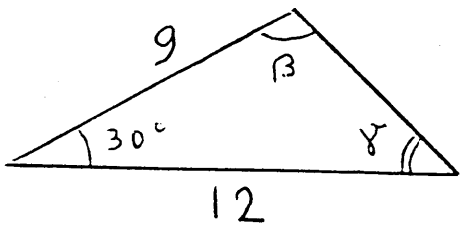
Math 113 EXAM II, March. 29, 2000, (1 1/2 hour).

NAME: SECTION:

I	II	III	IV	V	VI	VII	Total
25	20	20	20	25	20	20	150

To receive credit for an answer, you MUST *show work justifying that answer.*
WHENEVER POSSIBLE, GIVE EXACT VALUES.

I. Determine the angles β and γ in the triangle shown on the figure. Evaluate the length of the third side. (25 points)

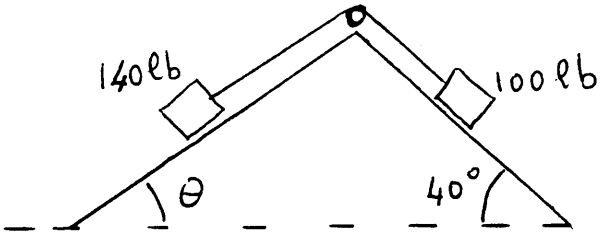


II. Give the exact values of: $\sin 195^0$, $\cos 195^0$, and $\tan 195^0$ (20 points)

III. Check the identity (20 points)

$$\frac{\cos x - \sin x \tan x}{1 + \tan x} = \sqrt{2}\cos(x + \frac{\pi}{4}).$$

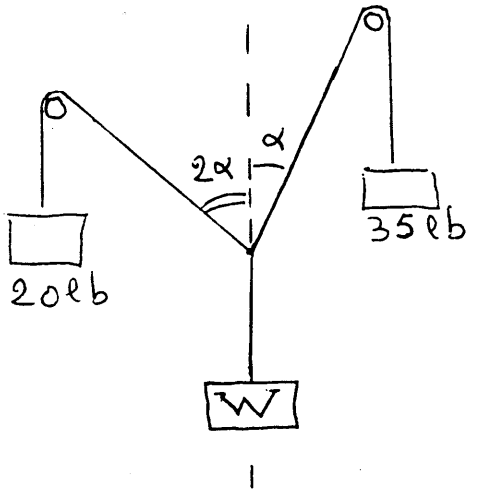
IV. Assume no friction. Will the weights shown on the figure move to the right or to the left? (20 points)



1) If $\theta = 50^0$:

2) If $\theta = 30^0$:

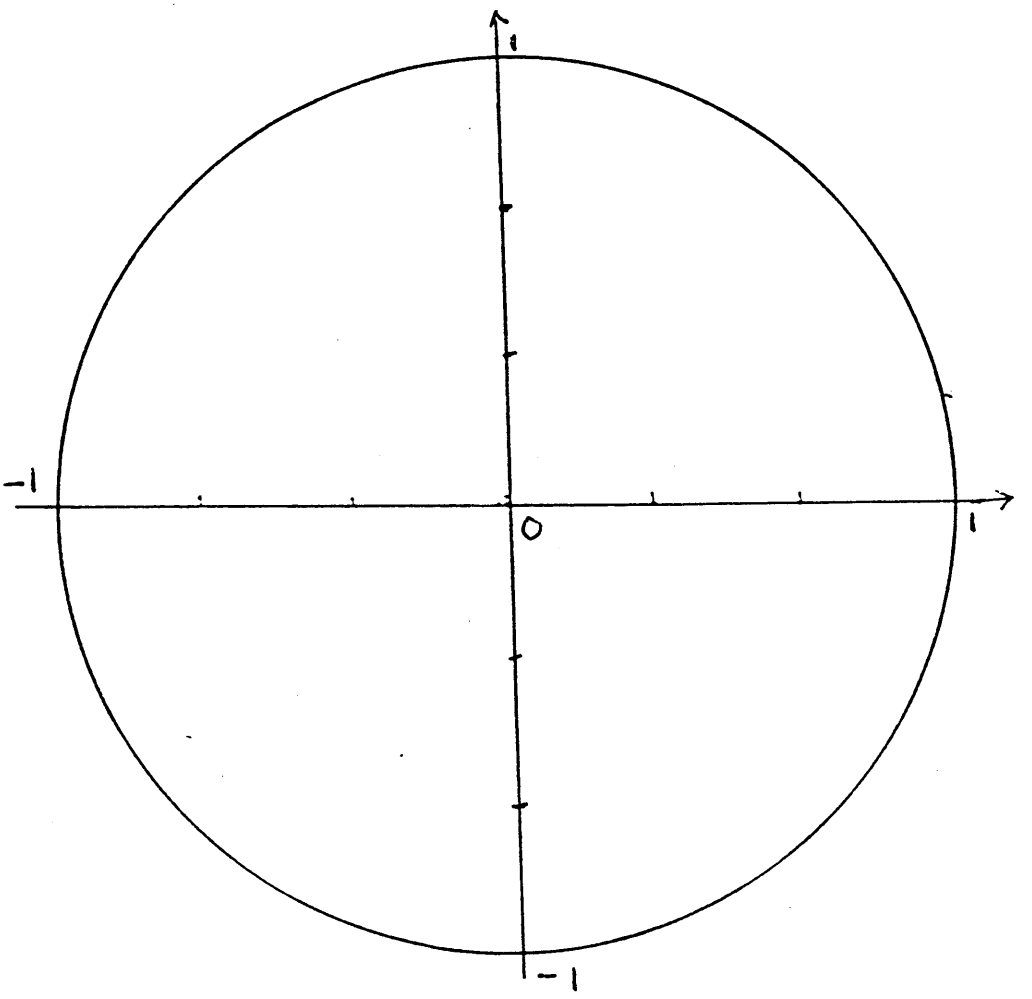
V. Determine the angle α, and the weight W, so that the following be an equilibrium position. (25 points)



VI. (20 points)

Show the terminal side for the angle x, in standard position, such that: $2\pi \leq x \leq 3\pi$ and $\cos x = -\frac{1}{3}$.

On the same figure, show the terminal side for the angle $\frac{\pi}{2}$. Evaluate $\sin \frac{\pi}{2}$ and $\cos \frac{\pi}{2}$. Give exact values. Full credit will not be given for unclear or unprecise figures.



VII. Without calculator. (20 points)

A triangle has two sides whose lengths are 3 and 2 (units). For which values of the lentgh L of the third side, is this triangle a right triangle? For which values of L has this triangle an obtuse angle?