MAT 122 Written Assignment for Chapter 3 Name_____
40 Points

This Assignment is due Monday, November 8th at 5 p.m. You may send me a CRISP, CLEAR, BLACK-and-WHITE PDF or slide it under my office door (EDBH 134K) on Greeley Campus or mail the original to my home address:

Harry Mills
2358 50th Ave
Greeley, CO 80634

I will only accept unlined (copier or printer) paper. If you do a PDF scan, and can't get the background white and the writing very dark (black), then I won't accept it. College Algebra students can do it, so College Trigonometry students can, too. But if you can't, because of technology, just send me the paper-and-pencil work, either by sliding it under my door or mailing it to me. As long as the postmark is November 5th or before, you will receive full credit.

SHOW ALL WORK. CIRCLE FINAL ANSWERS. Answers without supporting work will receive at most half credit, and probably much less. Leave a one-inch MARGIN in the top left corner. Any work stapled-over or exercise #s stapled-over will receive zero credit.

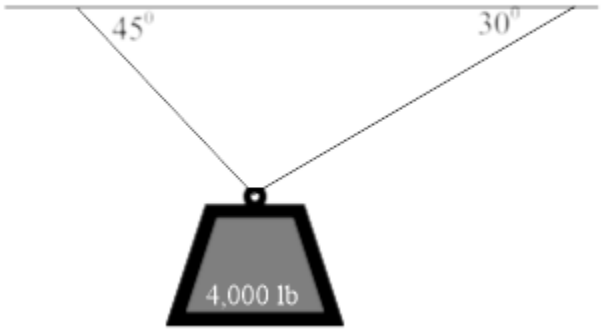
Use lots of space. LEAVE lots of space. Cramped work will not receive full credit. The easier it is for me to process your fine work, the more points you will receive. If your work is cramped or illegible, I won't waste my time because you took too little care in making a solid presentation. It doesn't have to be textbook-quality, but it needs to be clear.

Ask me if you're not sure.

1. (10 pts) Determine how many solutions there are to a triangle with $A = 30^0, a = 15, b = 10$. If there is one, use the Law of Sines to find it. If there are two, use the Law of Sines to find both. If there are none, so state. Round final answer(s) to 4 decimal places.

2. (10 pts) Use the Law of Cosines to solve the triangle with sides $a = 10,\ b = 15,\ c = 20$. Round final answers to 4 decimal places.

3. (10 pts) A 4,000 weight is suspended from cables between 2 hooks as shown in the figure. Determine the tension in each cable. Round final answers to 4 decimal places.



4. Let $\overline{u} = \langle 5, 3 \rangle$ and $\overline{v} = \langle 8, -7 \rangle$.
   a. (7 pts) Find $\text{proj}_{\overline{v}}\overline{u}$.
   b. (3 pts) Write $\overline{u}$ as the sum of orthogonal vectors, where one is parallel to $\overline{v}$.

Use this page as your cover sheet. All I want on this page is your name. Do all your work on separate, plain white paper.

Thanks!