tcore 122: Midterm

- 1. True/False: If true, explain briefly why the statement is true. If false, provide an example that contradicts the statement.
 - (a) [2] (Wheater §1.4) Given the statements "If I eat a big lunch, then I get sleepy in the afternoon." and "I took an afternoon nap.", we can conclude that "I ate a big lunch".
 - (b) [2] (Wks #1) If A and α are vertical angles, then $A \cong \alpha$.
 - (c) [2] (Quiz3 #1) If A and α are corresponding angles, then $A \cong \alpha$.
 - (d) [2] (Week 3) The origami pattern I presented did not use a base. (Please specify which origami pattern you presented!)

2. [2] (Quiz1 #5) Lang claimed you can let "dead people do you work for you." What particular results from dead people was Lang interested in and how did it help with the design of new origami shapes?

3. [3] (Lang) Identify what the origami symbols below mean.



4. [4] (Lecture 4/25) Identify the base each of the origami directions below make use of.



5. [5] (viHart video 4/2) Explain *carefully* how to make a 22.5° "angle-a-tron" in a Patty Paper worksheet setting. That is, explain how you can build an angle of 22.5° using only patter paper, a pencil, your sense, and logic.

6. [4] (Quiz3 #3) Explain the difference between how Pythagorus thought/worked with numbers and how people today think/work with numbers.

- 7. (Technical Communication Today) Richard Johnson-Sheehan gave a long list of suggestions to authors of instruction sets.
 - (a) [1] Identify one of his suggestions that you use well.
 - (b) [1] Identify one of his suggestions that you think *if you used this suggestion*, it would improve your write-ups for the worksheets.

8. [2] (Mathematician's Lament) What is Paul Lockhart's thesis/point in "A Mathematician's Lament"?

9. [3] (Between the Folds) There is a "Great Debate" amongst those who fold origami about the whether the recent, more technical, folding techniques developed constitute art. Explain your position.

- 10. Consider the diagram on the right. Show your work and find:
 - (a) [1] a pair of alternating exterior angles,
 - (b) [1] the measure of $\angle E$,
- 4. 4. 4. 4. 4. 3.5 70° 44° X
- (c) [2] the measure of $\angle F$,
- (d) [1] a pair of similar triangles,
- (e) [2] the measure of side x.

11. [10] Consider a standard 8.5" by 11" sheet of notebook paper. Identify the lower right hand corner of these piece of paper with a point/label A. Define the Turned-Up Part, (or TUP) as the part of the back side of the paper that becomes exposed when folding point A to meet another point B (that may or may not be on the paper).

Find an answer to the question "How can we tell how many edges a TUP will have *before* we fold the paper?"

Treat this is as a patty paper exercise so use paper(s), a pencil, and a calculator.