

Score 122: Midterm

1. [8] (Quiz 1 #2) Consider the diagram on the right.
Find:

(a) the measure of $\angle BCH$

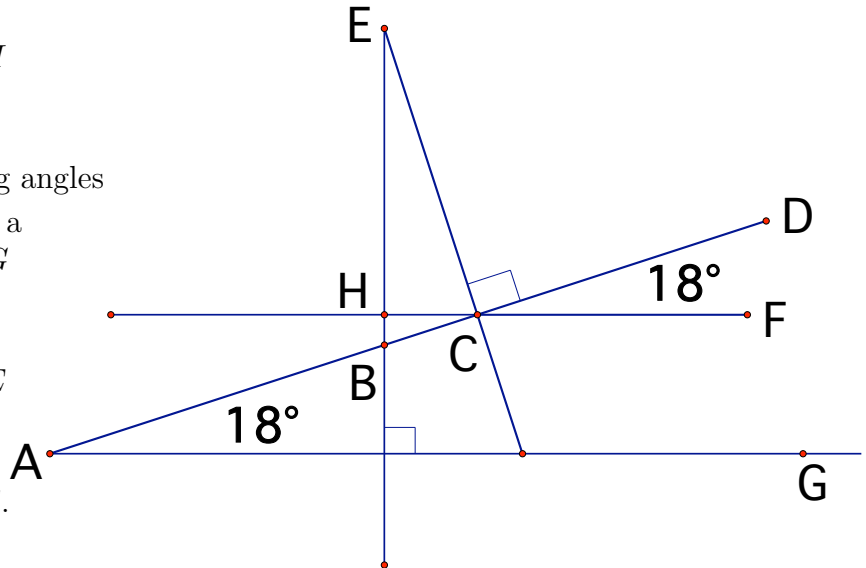
(b) a pair of corresponding angles
where we treat \overrightarrow{AD} as a
transversal of F and G

(c) the measure of $\angle HCE$

(d) the measure of $\angle ACF$.

(e) a pair of similar triangles

(f) whether F is parallel G or not. *Justify* your answer.
(Hint: Consider using some of your work from above.)



2. Consider the tools, physical tools, for a moment....

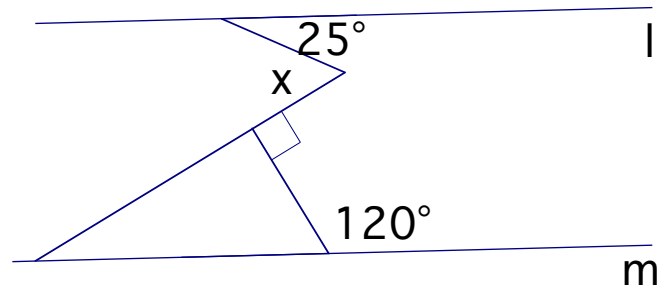
(a) [2] (Lecture 3/28) What tools are you allowed to use during patty paper worksheet investigations?

(b) [2] (Lecture 4/11) Name two tools mathematicians born before 100AD could use to study geometry problems?

(c) [2] (Lecture 4/11) Name two tools mathematicians born before 100AD could *not* use to study geometry problems?

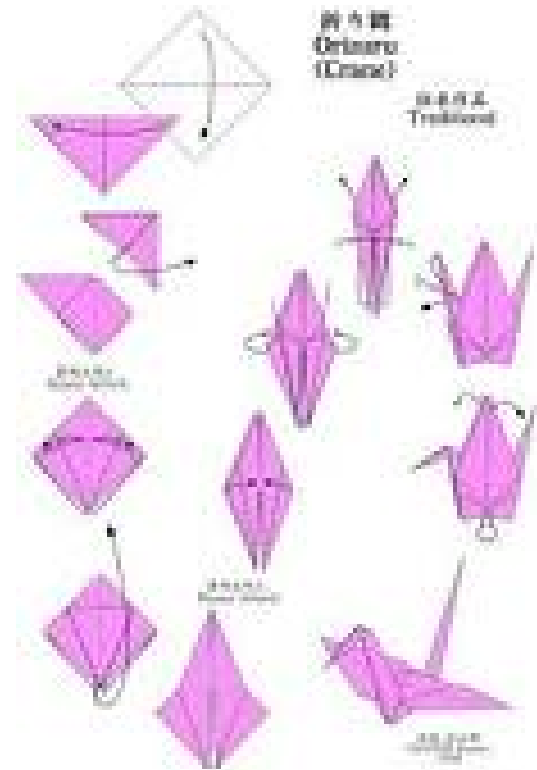
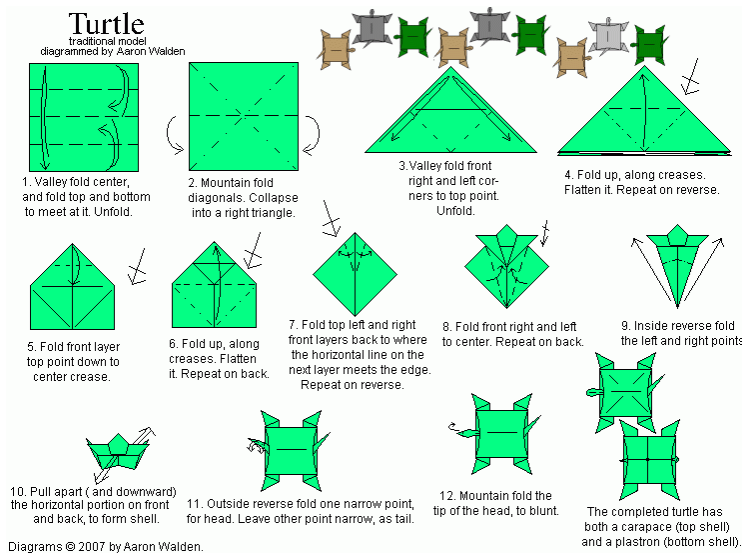
3. [2] (Wheater §1.3) Make a conditional statement that is false, but whose converse is true.

4. [4] (Quiz 2 #3) The two lines l and m are parallel. Find the measure of angle x . Make sure that your *reasoning* is easy to follow. Note, this diagram is not drawn to scale.



5. [4] (Wheater §7.4 #18) If $\triangle VWX \sim \triangle LIP$, $VW = 2x + 6$, $VX = 6$, $LP = 7$, $LI = 3x - 5$, find the measure of LI

6. [4] (Lecture 4/20) Identify the base each of the origami directions below make use of.



7. [3](Lang) Identify what the origami symbols below mean.



8. [3] (Quiz 3 #5) Justify the following quote found on page 46 of Lang's text:

Generally, the more long points a model has, the smaller the final model will be relative to the size of the square.

9. Okasha spends chapter 1 of his book *Philosophy of Science, a Very Short Introduction* trying to define science.

(a) [1] What did Okasha decide the definition of science should be?

(b) [1] How would you define a scientist?

10. (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.

11. [2] (Lecture 4/20) What was the most surprising/interesting information you learned from the video *Between the Folds* shown on 4/20?

12. [10] Consider a patty paper square where each side has length one. The area of this square is then one square unit. Find a *square* inside the patty paper that has half the area of the original patty paper. Explain your process and *justify* why your method works.

Hint: the area of a square is $\text{base} \cdot \text{height}$ or $(\text{base})^2$.

This is a patty paper exercise so the only tools you may use are patty paper(s), a pencil, and a calculator.