Directions: Your answers to this homework should be neatly written or typed AND proof read before you submit it for grading. If you need to draw diagrams on any homework you must draw them by using your drawing tools or use a computer drawing program if you wish. I do not want messy, frehand drawings! Write complete sentences to explain your solutions to these problems. This homework is due Monday in class. Remember, no late homework papers will be accepted!

Read pp. 1-19 in the textbook, which you can find on-line on the class web page.

1. We are going to do some distance estimating using some free and easy to use computational tools. First, use your favorite browser to open Google maps at http://maps.google.com.

Now find Geneva, NY and browse around looking to see what other towns and geographical features are in this area you might not know about.

Locate the Keuka Outlet Trail. How long is it and what towns does it connect?

Find Corning, NY and look at the satellite view of the town. What do you see? What is in Corning, NY that is a bit unusual?

2. As a way to appreciate the utility and ubiquity of numbers around us, here is an exercise which involves measuring distance using a smart phone application or fitness appliance (FitBit, etc). If you don’t have a smart phone which runs applications, you will need to do some estimating using another method described below.

a) Search either Google Play, iTunes Apple App Store, or other source for a free pedometer application and install it on your phone. A pedometer application estimates the distance you walk using the number of steps you take during the day. Install the app and figure out how it works and what it can tell you.

b) Use your app to estimate how much distance you have walked as you go to class, go to lunch, workout, etc for two full 24 hour days. Take the average of the two days and use that as typical walking distance for one day of walking.

c) Using the distance estimate in part b) estimate how far you walk in a typical week, seven days.

d) Using your distance estimate from part b), how far from HWS could you walk in a month, say 30 days? Use Google maps again and find a town or other destination that is about that same distance from HWS. Print a copy of the Google map showing where a solid month of walking would take you.

e) Estimate how long it would take you to walk the Appalachian Trail.

Note: If you don’t want to use a pedometer app, you need to estimate your steps by counting about how many steps you take in a typical hour during the day and multiply by the length of your stride.

We will be making tangrams in class on Friday. Bring your tools (straightedge or ruler, Xacto knife, pencil)!
3. After you have made your own tangram puzzle in class on Friday, you need to try to make some of the classic, convex tangram shapes beyond the square which is the original tangram arrangement. The rules to creating a tangram shape are simple. You must use ALL the tangram pieces, no overlaps, and no gaps between pieces.

Below you will find a display of ALL the convex tangram shapes numbered 1-12. These are the same shapes you will find on page 16 in the text. You must create all these shapes using your tangram puzzle pieces according to the rules given above. As you create each shape, sketch how they go together showing the various pieces much like the picture on page 15 in the text. Use both sides of pages to show your solutions which you must hand in as part of your homework.

4. A creative moment arrives. Make a new tangram shape of your very own to show off to the class. Again, the basic tangram rules apply but you can make your shape anything you want. Animals, boats, shoes, faces, anything is allowed. Trace around your tangram pieces and/or color them in if you wish to clearly show your shape and how it is formed for the viewer. See what you can come up with for creative shapes.

Extra credit: Get out of the box. Invent your own shape puzzle. Choose some geometric shape and divide it into pieces which can be used to form other interesting shapes. Extra credit given here for something clever and original.