

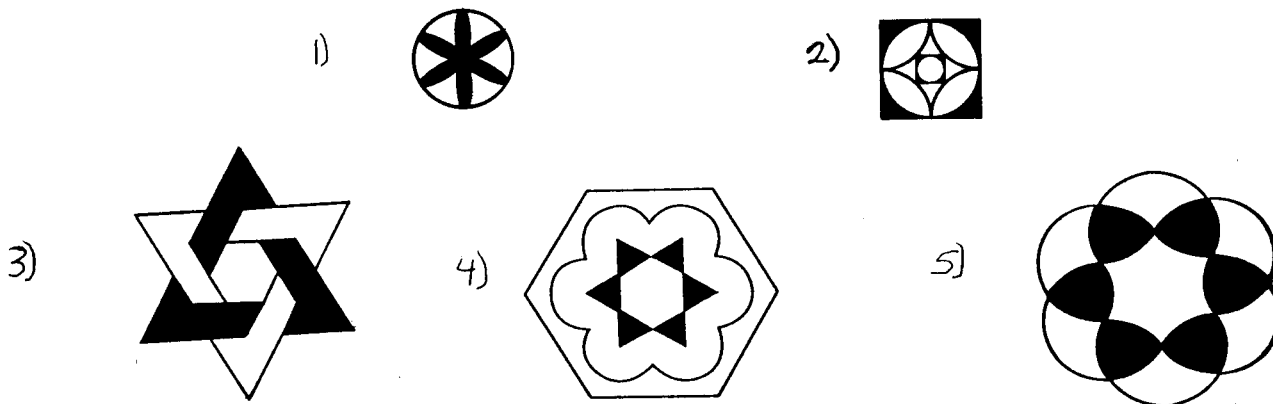
Construction Project

Purpose:

- To practice the constructions we have learned.
- To gain an appreciation for the need for carefulness and precision in constructions.

Assignment:

All of the designs below are constructible using only a compass and straight edge. Please note that number one has sharp points not rounded and that number four had special proportions which must be considered when constructing the design.



Your group will choose one design and develop a step by step plan detailing how you can construct the design. After your plan has been approved, you will follow it and construct the design. You will submit a Xerox copy of your work with the construction lines and a neat colored displayable design without the construction lines. (You may want to submit a series of Xerox copies to show your steps.)

Your group will also work together to create an original design. It should be submitted in displayable form also along with a step by step description of how someone else could reproduce your design.

Schedule:

- Monday, October 12: Receive project assignment
- Wednesday, October 14: In class, will receive approval of group and your assigned design.
- Monday, October 19: In class, hand in detailed plan of assigned design. (This is to verify that you are on the right track. It should include a step-by-step plan for your assigned design only. Sketches are appropriate. Completed constructions are not necessary.)
- Wednesday, October 21: In class, will receive graded plan.
- Thursday, October 29 : By 4⁰⁰ pm, hand in completed project. This means: revised plan of assigned design after grading, copy of assigned design with construction lines showing (presentation is your preference), assigned design in displayable form, step by step description of original design, and original design in displayable form.

Grading:

- Meeting group deadline 4 points
- Plan 15 points (neatness 4, clarity 5, correctness 6)
- Final product:
 - Assigned Design 20 points (step by step description 7, copy with construction lines 7, colored design 6)
 - Original design with description 11 points (clarity 6, difficulty 3, neatness 2)

Points in each area will be based on clarity, neatness, precision, originality, professionalism of presentation, and also on ability to follow directions.

Original designs will partially be graded on their level of difficulty.

Hints:

In your future you may be asked to work on a committee to solve a problem in your school, come up with a new plan for how to do something at the school, or work with other teachers to earn a grant for some project at your school. Treat this project as you would one of those. Strive for a high level of professionalism and do your best. (On the academic side, remember that projects count in your tests average.)

Remember - precision is a must in constructions. One slip of the compass can result in a lop-sided figure.

Designs should almost cover the width of an ordinary sheet of paper.

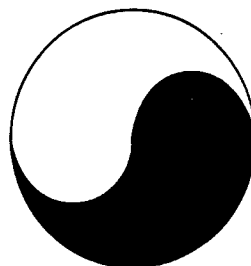
Typewritten papers are not required, but remember you are being graded on neatness. It might be a good idea to type your work.

Treat your designs like a work of art. Feel free to sign them in the bottom right corner as an artist would.

I am more than willing to help on any instruction you do not understand or if you simply want to have your work checked along the way. However, I will not do so during class. Feel free to see me in my office. My office hours are listed in your syllabus. I am there more than that - you can call ahead to see if I am available or check the board outside my office for notes concerning my whereabouts.

DO NOT ASSUME THAT THIS EXAMPLE IS "A" QUALITY.

Design pattern:



Plan:

1. Construct a circle. Be sure to mark center



2. Draw a diameter.



3. Find the midpoint of both radii which make up the diameter. Do so by constructing the \perp bisectors of both



4. Draw two new circles each with radius equal to the distance from the midpoint of the radii to the center.



Note: The two small circles should have equal radii.

5. Erase unneeded areas



6. Color