

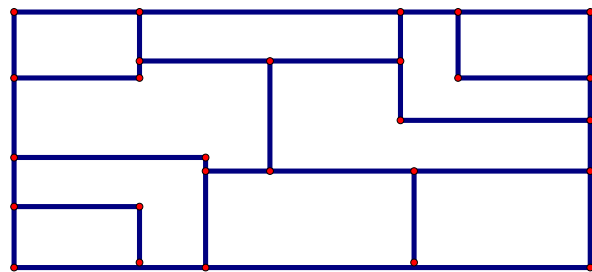
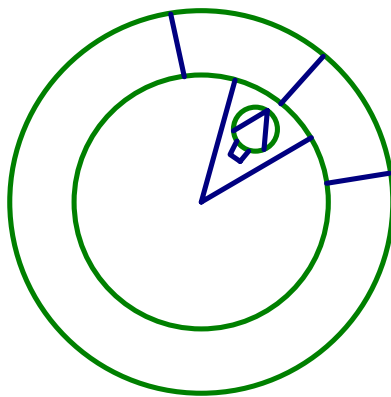
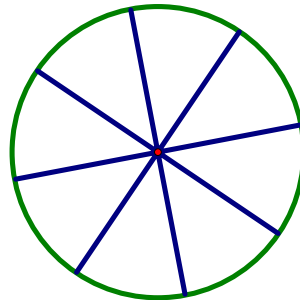
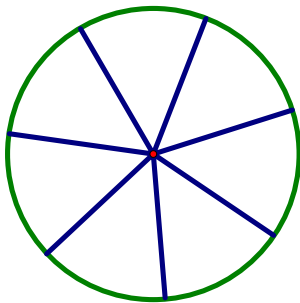
## Geo Assessment

## Patterns

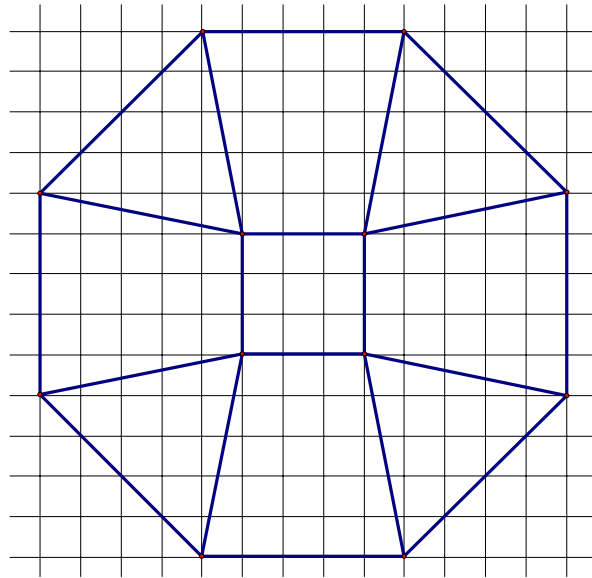
Choose the tools you prefer to do this assignment, straight edge, graph paper, Geometer's Sketchpad, etc. On your document, make certain you draw and/or explain all work. Answer all questions below on your document as well.

### Activity 1:

- 1) John works for a company that designs tile floors. As he creates different designs, using regular polygons, he notices that not all polygons will tessellate. Experiment to find out which polygons will tessellate. Then explain why some polygons will tessellate and others will not.
- 2) John notices that in some floor patterns, he needs to use four colors so that regions that share a common side are different colors. Given the four figures below, tell the minimum number of colors needed to color each figure.

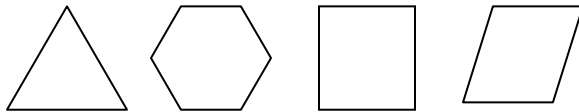


- 3) You have been given a floor pattern and you must find the approximate area so that you will know how many of these designs you will need for a particular room. If the side of one square is one inch, find the approximate area of the figure at the right.



- 4) If you have a floor that is 10 feet by 12 feet, how many of the above patterns would you need to cover the floor?

- 5) John's floor design company has decided to have a contest for the most original floor design. The Grand Prize is a trip to two to Hawaii. You decide you would like to enter. The rules say you must use at least two of the following figures in your tessellation design. Make a sketch of what your floor design will look like.



- 6) John's company has given you one of their floor designs. Reproduce this design, Then explain how or when you used reflection, rotation, and translation to create the design.

