

Math 6140, Fall 2013: Homework # 10.

- (Use Geometer's Sketchpad.) In Figure 1, find an equation relating $\angle 1$, arc ABC and arc DEF .

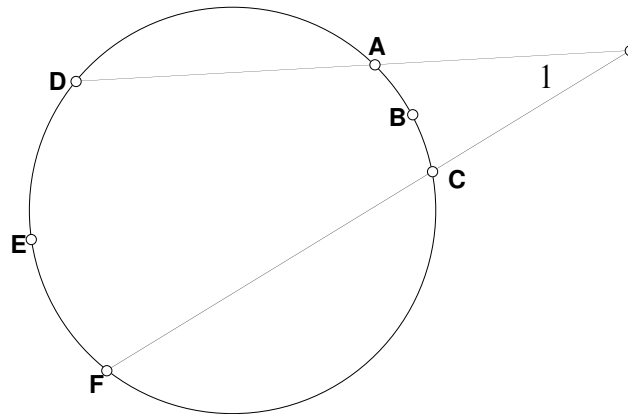


Figure 1

- (In this problem we continue to prove what you discovered in Problem 2 of Assignment 6.) See Figure 2. Given: G is the centroid of $\triangle ABC$ and U, V, W, X, Y and Z are the centroids of the six “little triangles.” To prove: the area of $\triangle DZU$ is $1/16$ of the area of $\triangle DEF$. (You may use anything that you have already proved about this picture in earlier homework. But be specific in saying what you are using and when it was shown.)

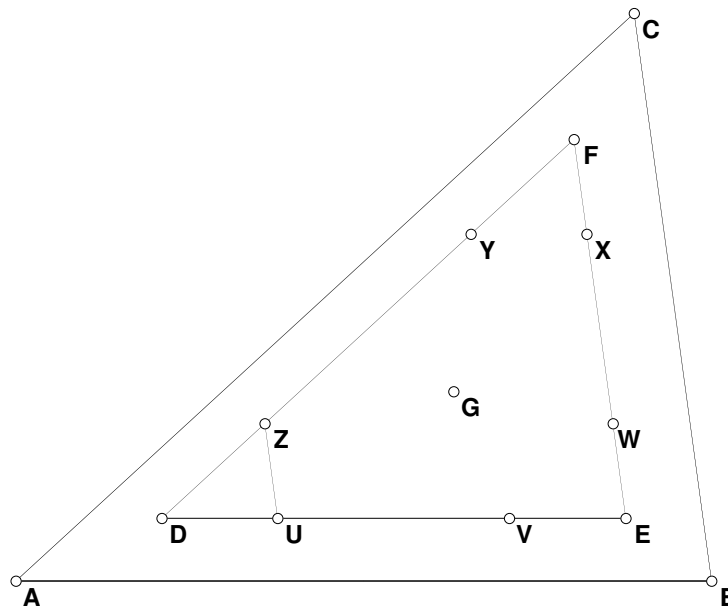


Figure 2

3. (See Figure 3.) Given: $ABDE$ and $ACFG$ are squares (and the lines that look straight are straight, so that $\angle ABC$ is a right angle since CBD is a straight angle).
To prove: $BG = CE$ and $BG \perp CE$.

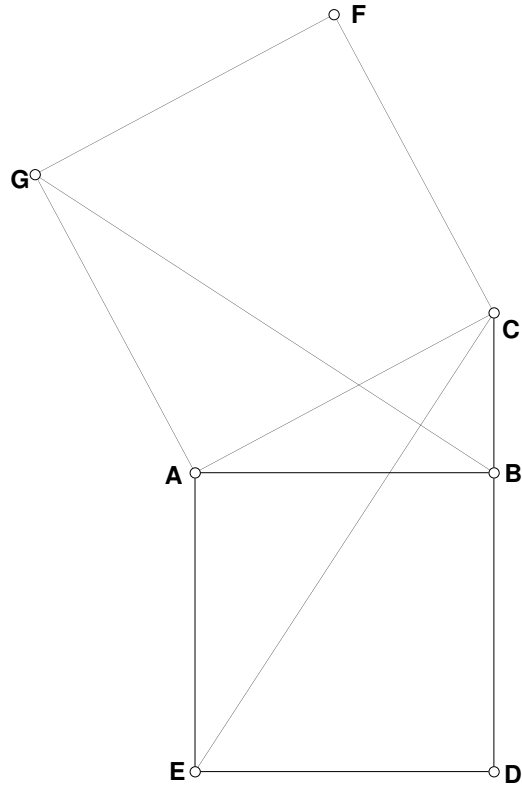


Figure 3

— The End —