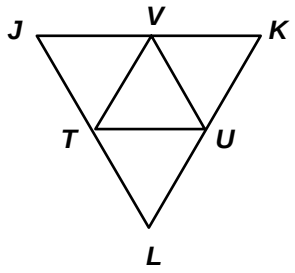
Geometry Journal: Medians, Altitudes, Bisectors and Midsegments
www.jmap.org

NAME:_____

P.I. G.G.42: Investigate, justify, and apply theorems about geometric relationships, based on the properties of the line segment joining the midpoints of two sides of the triangle

1. Draw a right triangle and its midsegments. Compare the four triangles created by the midsegments with the original triangle. Make a conjecture about your observations.

2. Write a paragraph proof showing that the midsegments of an equilateral triangle form an equilateral triangle.
   Given: Equilateral ΔJKL with midpoints T, U, and V
   Prove: ΔTUV is equilateral



[1] Each is a right triangle that is similar to the original triangle; the scale factor is $\frac{1}{2}$.

[2] Equilateral ΔJKL has midpoints *T*, *U*, and *V*. Since $JK = KL = JL$, $\frac{1}{2}JK = \frac{1}{2}KL = \frac{1}{2}JL$ by the Mult. Prop of =. By the Triangle Midsegment Theorem, $TU = UV = TV$. Thus, ΔTUV is equilateral.