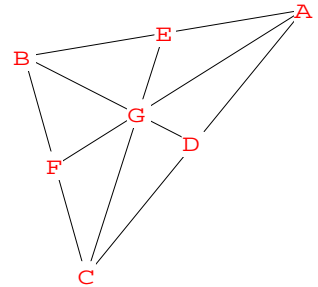


Objective: To explore relationships among triangles and elements of triangles formed by the three medians in a right isosceles triangle and random triangle.

1. Click **shape/Triangle/SAS** to create an isosceles right triangle. **Point/Midpoints** to mark the midpoint (D) of AC. **Btms/seg.** Left click and drag to draw median BD. Measure and record lengths, areas and perimeters of the three triangles. State conjectures about one median.
2. In the same manner draw the other two medians. Right click to label the centroid. Measure the sides and angles to determine pairs of congruent triangles (Use SAS, SSS, ASA, AAS).

DRAWINGS AND DATA

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3. Prove two pairs of congruent triangles (homework).
4. Measure to determine the location of the centroid.  
Hint: Find the relationship between AG & GF, BG & BD, CG & GE.
5. Measure to determine the area relationships between the six interior triangles.
6. Measure to determine the perimeter relationships.
7. Draw EF, FD, DE. Is there a relationship between triangles ABC and DEF?
8. **Edit/All delete. Shape/Random/Triangle.** Repeat the drawing of the three medians and the centroid. Measure to verify your conjectures are true for a random triangle. **Edit/Randomize** to test your conjectures on other random triangles.

