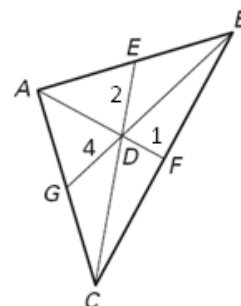Name:_____

Medians and Altitudes of a Triangle

Exercise 1: *D* is the centroid of $\triangle ABC$ and DG=4. Find the indicated values.
Find:

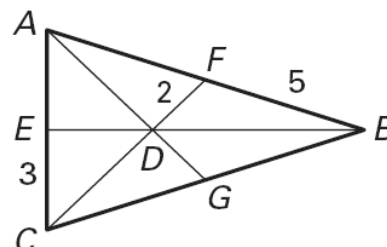   1) *BG.*
      2) *BD*
      3) *EC*
      4) *AF*
      5) *AD*

Exercise 2: Use the figure and the given information. D is the centroid of $\triangle ABC$, $\overline{BE} \perp \overline{AC}$, $\overline{AB} \cong \overline{CB}$, FB=5, EC=3, and DF=2

    1) Find CF

    2) Find CG

    3) Find CD

    4) Find the perimeter of $\triangle ABC$

Exercise 3: Construct a right triangle. Label it $\triangle ABC$ with right angle *B*. Construct median *BD*. Compare the lengths of *BD*, *AD*, and *CD*.

Exercise 4: In an isosceles triangle, show that the bisector of the angle formed by the equal sides is also a perpendicular bisector, an altitude and a median of the triangle.

Exercise 5: In an equilateral triangle, show that the three angle bisectors are also the three perpendicular bisectors of sides, three altitudes and the three medians of the triangle.

Exercise 6: In the given figure if BF = FC, ∠BAE = ∠CAE and ∠ADE = ∠GFC = 90° then name a median, an angle bisector, and altitude and a perpendicular bisector of the triangle.
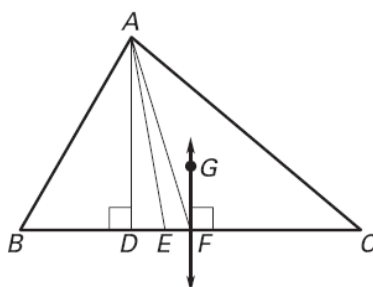
Exercise 7: Prove that if a triangle is equilateral, then an angle bisector is also a median.