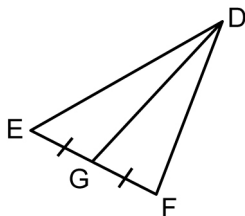
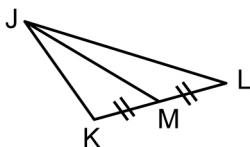


## Section 3.1 Practice Master

1. The area of  $\triangle DEF$  is 28 square units. Find the area of  $\triangle DEG$ .



2. The area of  $\triangle JKM$  is 16 square units. Find the area of  $\triangle JKL$ .

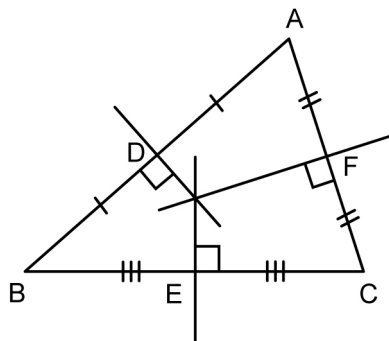


3. a) Draw any isosceles triangle. Then, construct the median from the vertex between the equal sides.  
 b) List three properties of this median that a median of a scalene triangle does not have.  
 c) Verify these properties by measuring your drawing.
4. a) Draw any equilateral triangle. Then, construct the angle bisector of each vertex.  
 b) Verify that the angle bisectors and the right bisectors of the sides all meet at the same point.
5. List at least three properties of isosceles triangles. Explain how you know that every isosceles triangle has each of these properties.

### 6. Use Technology

- a) Construct any  $\triangle PQR$ . Then, construct the midpoint  $X$  of side  $PQ$  and the midpoint  $Y$  of side  $QR$ .  
 b) Show that line segment  $XY$  is parallel to line segment  $PR$ .  
 c) Show that line segment  $XY$  is half the length of line segment  $PR$ .

7. In this triangle, the right bisectors of the three sides meet at a single point, called the circumcentre. Investigate whether the right bisectors intersect at a single point in all triangles. Outline your method and describe your findings.



8. a) Investigate whether every triangle has an orthocentre, a point where the altitudes of all the sides meet. Describe your method and your results.  
 b) Where is the orthocentre located if the triangle is a right triangle?  
 c) Where is the orthocentre located if the triangle is an obtuse triangle?