1. Define and represent by a figure each of the following terms: 
   (a) supplement of an angle; (b) locus of a point; (c) apothem; 
   (d) inscribed angle.

2. One angle of an oblique triangle is seven-eighths of a right angle, what is the value of the adjacent exterior angle?

3. Prove that, if two parallel lines are cut by a third line, the exterior-interior angles are equal.

4. Prove that, in the same or equal circles, two angles at the centre have the same ratio as their intercepted arcs. (2 cases.)

5. Prove that, if four quantities are in proportion, they are in proportion by composition.

6. Prove that the perpendicular from any point of the circumference of a circle to its diameter is a mean proportional between the segments of that diameter.

7. Prove that the area of a regular polygon equals one-half the product of its apothem and perimeter.

8. Construct the following and prove that each result satisfies the required conditions:
   (a) Construct a square equivalent to a given parallelogram;
   (b) Construct a triangle, given a side and two angles;
   (c) Circumscribe a circle about a given triangle;
   (d) Inscribe a regular polygon of eight sides in a given circle.

9. The sides of a triangle are 12, 15 and 18; find the segments of the side 18, made by the bisector of the opposite angle.