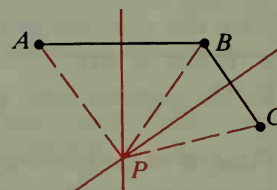
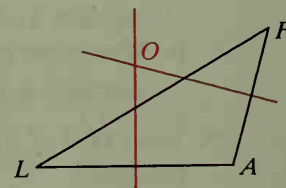
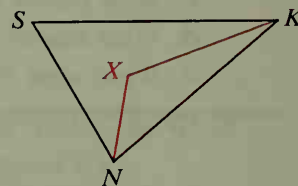


## Written Exercises

- A**
1. a. Draw a large scalene triangle  $ABC$ . Carefully draw the bisector of  $\angle A$ , the altitude from  $A$ , and the median from  $A$ . These three should all be different.  
 b. Draw a large isosceles triangle  $ABC$  with vertex angle  $A$ . Carefully draw the bisector of  $\angle A$ , the altitude from  $A$ , and the median from  $A$ . Are these three different?
  2. Draw a large obtuse triangle. Then draw its three altitudes in color.
  3. Draw a right triangle. Then draw its three altitudes in color.
  4. Draw a large acute scalene triangle. Then draw the perpendicular bisectors of its three sides.
  5. Draw a large scalene right triangle. Then draw the perpendicular bisectors of its three sides and tell whether they appear to meet in a point. If so, where is this point?
  6. Cut out any large triangle. Fold the two sides of one angle of the triangle together to form the angle bisector. Use the same method to form the bisectors of the other two angles. What do you notice?

**Complete each statement.**

7. If  $X$  is on the bisector of  $\angle SKN$ , then  $X$  is equidistant from ? and ?.
8. If  $X$  is on the bisector of  $\angle SNK$ , then  $X$  is equidistant from ? and ?.
9. If  $X$  is equidistant from  $\overline{SK}$  and  $\overline{SN}$ , then  $X$  lies on the ?.
10. If  $O$  is on the perpendicular bisector of  $\overline{LA}$ , then  $O$  is equidistant from ? and ?.
11. If  $O$  is on the perpendicular bisector of  $\overline{AF}$ , then  $O$  is equidistant from ? and ?.
12. If  $O$  is equidistant from  $L$  and  $F$ , then  $O$  lies on the ?.
13. Given:  $P$  is on the perpendicular bisector of  $\overline{AB}$ ;  
 $P$  is on the perpendicular bisector of  $\overline{BC}$ .  
 Prove:  $PA = PC$



Use the diagrams on pages 153 and 154 to prove the following theorems.

- B**
- |                 |                 |
|-----------------|-----------------|
| 14. Theorem 4-5 | 15. Theorem 4-6 |
| 16. Theorem 4-7 | 17. Theorem 4-8 |