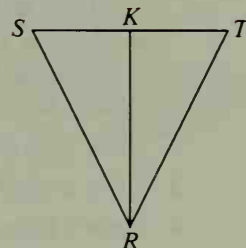


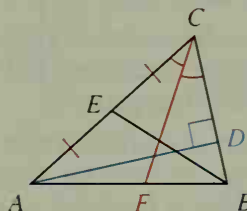
# Classroom Exercises

Complete.

1. If  $K$  is the midpoint of  $\overline{ST}$ , then  $\overline{RK}$  is called a(n)        of  $\triangle RST$ .
2. If  $\overline{RK} \perp \overline{ST}$ , then  $\overline{RK}$  is called a(n)        of  $\triangle RST$ .
3. If  $K$  is the midpoint of  $\overline{ST}$  and  $\overline{RK} \perp \overline{ST}$ , then  $\overline{RK}$  is called a(n)        of  $\overline{ST}$ .
4. If  $\overline{RK}$  is both an altitude and a median of  $\triangle RST$ , then:
  - a.  $\triangle RSK \cong \triangle RTK$  by       .
  - b.  $\triangle RST$  is a(n)        triangle.
5. If  $R$  is on the perpendicular bisector of  $\overline{ST}$ , then  $R$  is equidistant from        and       . Thus        =       .

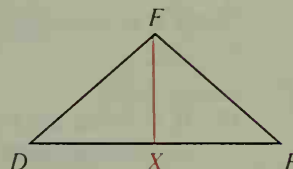


6. Refer to  $\triangle ABC$  and name each of the following.
  - a. a median of  $\triangle ABC$
  - b. an altitude of  $\triangle ABC$
  - c. a bisector of an angle of  $\triangle ABC$



7. Draw  $\overline{XY}$ . Label its midpoint  $Q$ .
  - a. Select a point  $P$  equidistant from  $X$  and  $Y$ . Draw  $\overline{PX}$ ,  $\overline{PY}$ , and  $\overline{PQ}$ .
  - b. What postulate justifies the statement  $\triangle PQX \cong \triangle PQY$ ?
  - c. What reason justifies the statement  $\angle PQX \cong \angle PQY$ ?
  - d. What reason justifies the statement  $\overline{PQ} \perp \overline{XY}$ ?
  - e. What name for  $\overline{PQ}$  best describes the relationship between  $\overline{PQ}$  and  $\overline{XY}$ ?

8. Given:  $\triangle DEF$  is isosceles with  $DF = EF$ ;  
 $\overline{FX}$  bisects  $\angle DFE$ .
  - a. Would the median drawn from  $F$  to  $\overline{DE}$  be the same segment as  $\overline{FX}$ ?
  - b. Would the altitude drawn from  $F$  to  $\overline{DE}$  be the same segment as  $\overline{FX}$ ?



9. What kind of triangle has three angle bisectors that are also altitudes and medians?
10. Given:  $\overrightarrow{NO}$  bisects  $\angle N$ .  
 What can you conclude from each of the following additional statements?
  - a.  $P$  lies on  $\overrightarrow{NO}$ .
  - b. The distance from a point  $Q$  to each side of  $\angle N$  is 13.

11. Plane  $M$  is the *perpendicular bisecting plane* of  $\overline{AB}$  at  $O$  (that is,  $M$  is the plane that is perpendicular to  $\overline{AB}$  at its midpoint,  $O$ ). Points  $C$  and  $D$  also lie in plane  $M$ . List three pairs of congruent triangles and tell which congruence method can be used to prove each pair congruent.

