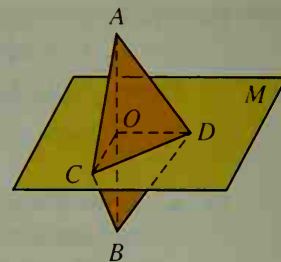
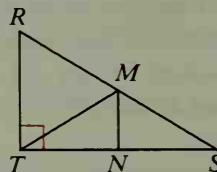


25. Given: Plane M is the perpendicular bisecting plane of \overline{AB} .
(That is, $\overline{AB} \perp$ plane M and O is the midpoint of \overline{AB} .)

Prove: a. $\overline{AD} \cong \overline{BD}$
b. $\overline{AC} \cong \overline{BC}$
c. $\angle CAD \cong \angle CBD$



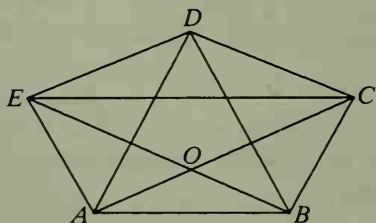
- C 26. Given: $m\angle RTS = 90^\circ$;
 \overleftrightarrow{MN} is the \perp bisector of \overline{TS} .
Prove: \overline{TM} is a median.



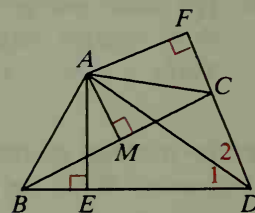
27. Given: \overline{EH} and \overline{FJ} are medians of scalene $\triangle EFG$; P is on \overline{EH} such that $\overline{EH} \cong \overline{HP}$; Q is on \overline{FJ} such that $\overline{FJ} \cong \overline{JQ}$.
Prove: a. $\overline{GQ} \cong \overline{GP}$
b. \overline{GQ} and \overline{GP} are both parallel to \overline{EF} .
c. P , G , and Q are collinear.

Write paragraph proofs. (In this book a star designates an exercise that is unusually difficult.)

- ★ 28. Given: $\overline{AE} \parallel \overline{BD}$; $\overline{BC} \parallel \overline{AD}$;
 $\overline{AE} \cong \overline{BC}$; $\overline{AD} \cong \overline{BD}$
Prove: a. $\overline{AC} \cong \overline{BE}$
b. $\overline{EC} \parallel \overline{AB}$



- ★ 29. Given: \overleftrightarrow{AM} is the \perp bis. of \overline{BC} ;
 $\overline{AE} \perp \overline{BD}$; $\overline{AF} \perp \overline{DF}$;
 $\angle 1 \cong \angle 2$
Prove: $\overline{BE} \cong \overline{CF}$



Explorations

These exploratory exercises can be done using a computer with a program that draws and measures geometric figures.

Decide if the following statements are true or false. If you think the statement is true, give a convincing argument to support your belief. If you think the statement is false, make a sketch and give all the measurements of the triangle that you find as your counterexample. For each false statement, also discover if there are types of triangles for which the statement is true.

1. An angle bisector bisects the side opposite the bisected angle.
2. A median bisects the angle at the vertex from which it is drawn.
3. The length of a median is equal to half of the length of the side it bisects.