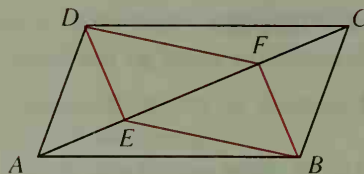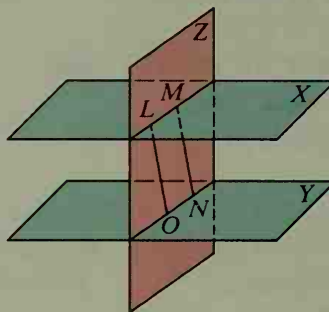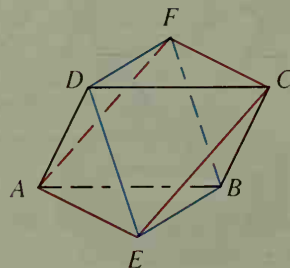**23.** Given: $\square ABCD$;
$\overline{DE} \perp \overline{AC}$; $\overline{BF} \perp \overline{AC}$
Prove: $DEBF$ is a $\square$.

24. Given: Plane $X \parallel$ plane Y;
$\overline{LM} \cong \overline{ON}$
Prove: $LMNO$ is a $\square$.

C **25.** Write a paragraph proof.

Given: $\square ABCD$; $\square BEDF$
Prove: $AECF$ is a $\square$.

(*Hint:* A short proof is possible if certain auxiliary segments are drawn.)

Explorations

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

Draw any $\triangle ABC$. Label the midpoint of $\overline{AB}$ as D. Draw a segment through D parallel to $\overline{BC}$ that intersects $\overline{AC}$ at E. Measure AE and EC. What do you notice?

Draw any $\triangle ABC$. Label the midpoints of $\overline{AB}$ and $\overline{AC}$ as D and E, respectively. Draw $\overline{DE}$. Measure $\angle AED$ and $\angle ACB$. What do you notice? What is true of $\overline{DE}$ and $\overline{BC}$? Measure DE and BC. What do you notice?

Write an equation that relates DE and BC. Repeat the drawing and measurements until you are sure of your equation.