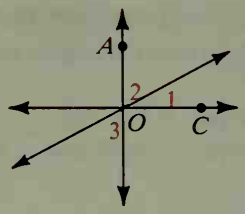
28. Copy everything shown and write a two-column proof.

Given: $\overleftrightarrow{AO} \perp \overleftrightarrow{CO}$

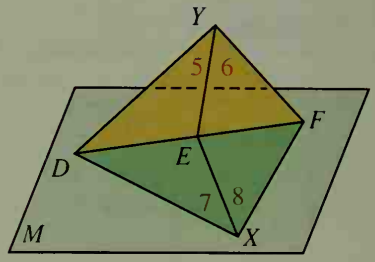
Prove: $\angle 1$ and $\angle 3$ are comp. $\measuredangle$s.



C **29.** First find two lines (other than $\overleftrightarrow{YD}$ and $\overleftrightarrow{YF}$) that are perpendicular. Then write a two-column proof that the lines are perpendicular.

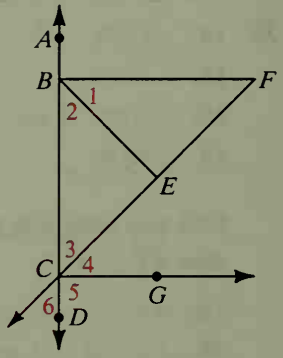
Given: $\overleftrightarrow{YD} \perp \overleftrightarrow{YF}$;
$m\angle 7 = m\angle 5$;
$m\angle 8 = m\angle 6$

Prove: $\underline{?} \perp \underline{?}$



Mixed Review Exercises

Write something you can conclude from the given information.



1. Given: $m\angle 1 = m\angle 4$; $m\angle 2 = m\angle 3$
2. Given: $AB = CD$
3. Given: $m\angle 6 = m\angle 4$
4. Given: $\overline{FB} \perp \overline{AD}$; $\overrightarrow{BE}$ bisects $\angle FBC$.
5. Given: $BE = EF$; E is the midpoint of $\overline{FC}$.
6. Given: $\angle 1$ and $\angle 2$ are complements.
7. Given: $\angle 4$ and $\angle 6$ are complements.

2-6 *Planning a Proof*

As you have seen in the last few sections, a proof of a theorem consists of five parts:

1. *Statement* of the theorem
2. A *diagram* that illustrates the given information
3. A list, in terms of the figure, of what is *given*
4. A list, in terms of the figure, of what you are to *prove*
5. A series of *statements and reasons* that lead from the given information to the statement that is to be proved

In many of the proofs in this book, the diagram and the statements of what is given and what is to be proved will be supplied for you. Sometimes you will be asked to provide them.