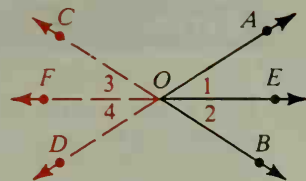
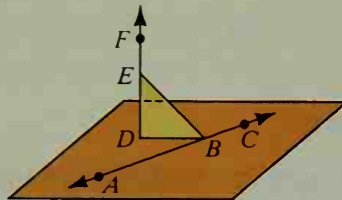


23. Draw any  $\angle AOB$  and its bisector  $\overrightarrow{OE}$ . Now draw the rays opposite to  $\overrightarrow{OA}$ ,  $\overrightarrow{OB}$ , and  $\overrightarrow{OE}$ . What can you conclude about the part of the diagram shown in red? Prove your conclusion.



- C 24. Make a diagram showing  $\angle PQR$  bisected by  $\overrightarrow{QX}$ . Choose a point  $Y$  on the ray opposite to  $\overrightarrow{QX}$ . Prove:  $\angle PQY \cong \angle RQY$

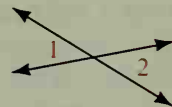
25. Given:  $m\angle DBA = 45^\circ$   
 $m\angle DEB = 45^\circ$   
 Prove:  $\angle DBC \cong \angle FEB$



## Self-Test 2

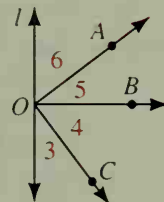
1. It is known that  $\angle HOK$  has a supplement, but can't have a complement. Name one possible measure for  $\angle HOK$ . *89*

2.  $m\angle 1 = 3x - 5$  and  $m\angle 2 = x + 25$   
 a.  $x = ?$  *15*      b.  $m\angle 1 = ?$  *40* (numerical value)



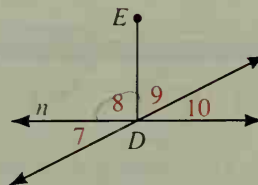
For Exercises 3 and 4 you are given that  $\overrightarrow{OB} \perp l$  and  $\overrightarrow{OA} \perp \overrightarrow{OC}$ .

3. If  $m\angle 3 = 37$ , complete:  
 $m\angle 4 = ?$  *53*       $m\angle 5 = ?$  *37*       $m\angle 6 = ?$  *53*
4. If  $m\angle 3 = t$ , express the measures of the other numbered angles in terms of  $t$ .  *$m\angle 4 = 90 - t$ ,  $m\angle 5 = t$ ,  $m\angle 6 = 90 - t$*



In the diagram,  $\overline{DE} \perp n$ . State the theorem or name the definition that justifies the statement about the diagram.

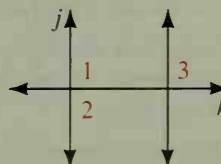
5.  $\angle 8$  is a  $90^\circ$  angle. *def of  $\perp$  lines*  
 6.  $\angle 7 \cong \angle 10$  *def of vertical lines*  
 7.  $\angle 9$  and  $\angle 10$  are complementary. *def of  $\perp$  lines*



8. Give a plan for the following proof.

Given:  $\angle 1$  is supp. to  $\angle 3$ ;  
 $\angle 2$  is supp. to  $\angle 3$ .

Prove:  $j \perp k$   *$\angle 1$  supp. to  $\angle 2$*



9. Write a proof for Exercise 8 in two-column form.