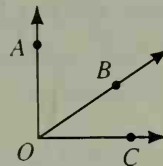


13. Copy and complete the proof of Theorem 2-6: If the exterior sides of two adjacent acute angles are perpendicular, then the angles are complementary.

Given:  $\overrightarrow{OA} \perp \overrightarrow{OC}$

Prove:  $\angle AOB$  and  $\angle BOC$  are comp.  $\angle$ .

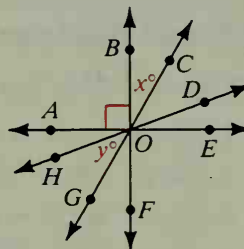


**Proof:**

Statements	Reasons
1. $\overrightarrow{OA} \perp \overrightarrow{OC}$	1. ?
2. $m\angle AOC = 90$	2. Def. of $\perp$ lines
3. $m\angle AOB + m\angle BOC = m\angle AOC$	3. ?
4. ?	4. Substitution Prop.
5. ?	5. Def. of comp. $\angle$

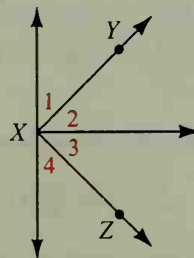
In the figure  $\overleftrightarrow{BF} \perp \overleftrightarrow{AE}$ ,  $m\angle BOC = x$ , and  $m\angle GOH = y$ . Express the measure of the angle in terms of  $x$ ,  $y$ , or both.

- B 14.  $\angle COA$  *90 - x*  
 15.  $\angle COH$   
 16.  $\angle HOF$  *x + y*  
 17.  $\angle DOE$



Can you conclude from the information given for each exercise that  $\overleftrightarrow{XY} \perp \overleftrightarrow{XZ}$ ?

18.  $m\angle 1 = 46$  and  $m\angle 4 = 44$   
 19.  $\angle 1$  and  $\angle 3$  are complementary. *no*  
 20.  $\angle 2 \cong \angle 3$   
 21.  $m\angle 1 = m\angle 4$  *no*  
 22.  $\angle 1$  and  $\angle 3$  are congruent and complementary.  
 23.  $m\angle 1 = m\angle 2$  and  $m\angle 3 = m\angle 4$  *yes*  
 24.  $\angle 1 \cong \angle 3$  and  $\angle 2 \cong \angle 4$   
 25.  $\angle 1 \cong \angle 4$  and  $\angle 2 \cong \angle 3$  *no*



What can you conclude from the information given?

26. Given:  $\overrightarrow{AB}$  bisects  $\angle DAC$ ;  
 $\overrightarrow{CB}$  bisects  $\angle ECA$ ;  
 $m\angle 2 = 45$ ;  
 $m\angle 3 = 45$   
 27. Given:  $\overrightarrow{AD} \perp \overrightarrow{AC}$ ;  $\overrightarrow{CE} \perp \overrightarrow{AC}$ ;  $m\angle 1 = m\angle 4$

