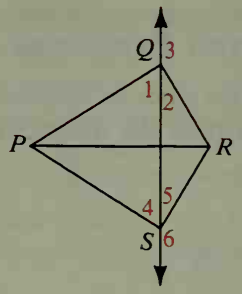
17. a. Copy everything shown and complete the proof.

Given: $\overline{PQ} \perp \overline{QR}$;
$\overline{PS} \perp \overline{SR}$;
$\angle 1 \cong \angle 4$

Prove: $\angle 2 \cong \angle 5$



Proof:

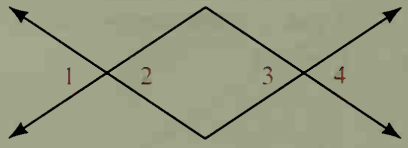
Statements	Reasons
1. $\overline{PQ} \perp \overline{QR}$; $\overline{PS} \perp \overline{SR}$	1. ?
2. $\angle 2$ is comp. to $\angle 1$; $\angle 5$ is comp. to $\angle 4$.	2. ?
3. $\angle 1 \cong \angle 4$	3. ?
4. $\angle 2 \cong \angle 5$	4. ?

b. After proving that $\angle 2 \cong \angle 5$ in part (a), tell how you could go on to prove that $\angle 3 \cong \angle 6$.

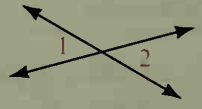
B **18.** Prove Theorem 2-8: If two angles are complements of congruent angles, then the two angles are congruent. *Note*: You will need to draw your own diagram and state what is given and what you are to prove in terms of your diagram. (*Hint*: See the proof of Theorem 2-7 on page 61.)

Copy everything shown and write a two-column proof.

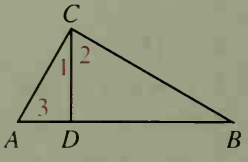
19. Given: $\angle 2 \cong \angle 3$
Prove: $\angle 1 \cong \angle 4$



20. Given: $\angle 3$ is supp. to $\angle 1$;
$\angle 4$ is supp. to $\angle 2$.
Prove: $\angle 3 \cong \angle 4$



21. Given: $\overline{AC} \perp \overline{BC}$;
$\angle 3$ is comp. to $\angle 1$.
Prove: $\angle 3 \cong \angle 2$



22. Given: $m\angle 1 = m\angle 2$;
$m\angle 3 = m\angle 4$
Prove: $\overrightarrow{YS} \perp \overleftrightarrow{XZ}$