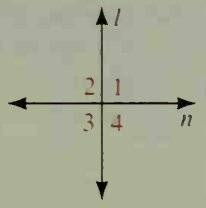
Classroom Exercises

1. Complete the proof of Theorem 2-4: If two lines are perpendicular, then they form congruent adjacent angles.

Given: $l \perp n$

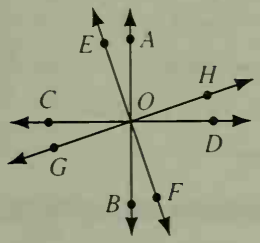
Prove: $\angle 1$, $\angle 2$, $\angle 3$, and $\angle 4$ are congruent angles.



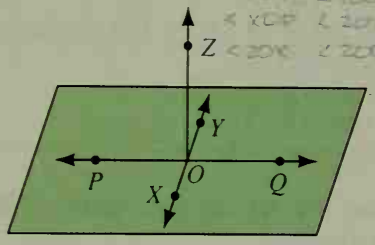
Proof:

Statements	Reasons
1. $l \perp n$	1. ?
2. $\angle 1$, $\angle 2$, $\angle 3$, $\angle 4$ are $90°$ $\measuredangle$.	2. Definition of ?
3. $\angle 1$, $\angle 2$, $\angle 3$, $\angle 4$ are $\cong$ $\measuredangle$.	3. Definition of ?

2. In the diagram, $\overleftrightarrow{AB} \perp \overleftrightarrow{CD}$ and $\overleftrightarrow{EF} \perp \overleftrightarrow{GH}$. Name eight right angles.

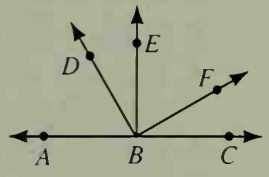


3. In the diagram, $\overrightarrow{OZ} \perp \overrightarrow{PQ}$, $\overrightarrow{OZ} \perp \overrightarrow{XY}$, and $\overrightarrow{PQ} \perp \overrightarrow{XY}$. Name eight right angles.



In the diagram, $\overrightarrow{BE} \perp \overleftrightarrow{AC}$ and $\overrightarrow{BD} \perp \overrightarrow{BF}$. Find the measures of the following angles.

	$m\angle CBF$	$m\angle EBF$	$m\angle DBE$	$m\angle DBA$	$m\angle DBC$
4.	40	?	?	?	?
5.	x	?	?	?	?



Name the definition or state the theorem that justifies the statement about the diagram.

6. If $\angle 6$ is a right angle, then $\overleftrightarrow{RS} \perp \overleftrightarrow{TV}$.

7. If $\overleftrightarrow{RS} \perp \overleftrightarrow{TV}$, then $\angle 5$, $\angle 6$, $\angle 7$, and $\angle 8$ are right angles.

8. If $\overleftrightarrow{RS} \perp \overleftrightarrow{TV}$, then $\angle 8 \cong \angle 7$.

9. If $\overleftrightarrow{RS} \perp \overleftrightarrow{TV}$, then $m\angle 6 = 90$.

10. If $\angle 5 \cong \angle 6$, then $\overleftrightarrow{RS} \perp \overleftrightarrow{TV}$.

11. If $m\angle 5 = 90$, then $\overleftrightarrow{RS} \perp \overleftrightarrow{TV}$.