

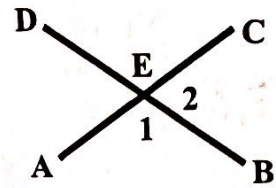
# Geometry Honors

## Proof Worksheet WS#1

Name Answer Key Period     

Given: Diagram

Prove:  $\angle 1$  and  $\angle 2$  are supplementary



Statements

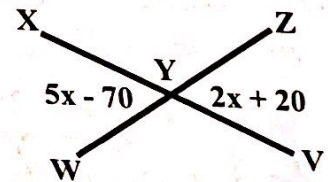
- ① Diagram
- ②  $\angle 1$  and  $\angle 2$  form a linear pair
- ③  $\angle 1$  and  $\angle 2$  are supplementary

Reasons

- ① Given
- ② Assumed by diagram
- ③ If two angles form a linear pair, then the angles are supplementary.

Given: The diagram

Prove:  $x = 30$



Statements

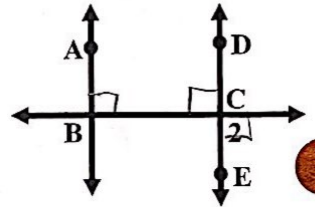
- ① Diagram
- ②  $\angle WYX$  and  $\angle ZYV$  are vertical angles
- ③  $\angle WYX \cong \angle ZYV$
- ④  $m\angle WYX = m\angle ZYV$
- ⑤  $m\angle WYX = 5x - 70$   
 $m\angle ZYV = 2x + 20$
- ⑥  $5x - 70 = 2x + 20$
- ⑦  $3x - 70 = 20$
- ⑧  $3x = 90$
- ⑨  $x = 30$

Reasons

- ① Given
- ② Assumed by diagram
- ③ If  $\angle$ 's are vertical  $\angle$ 's, then they are  $\cong$ .
- ④ If  $\angle$ 's are  $\cong$ , then their measures are equal.
- ⑤ Assumed by diagram.
- ⑥ Substitution POE
- ⑦ Subtraction POE
- ⑧ Addition POE
- ⑨ Division POE

Given:  $\overline{AB} \perp \overline{CB}$ ,  $\angle DCB$  is a right  $\angle$

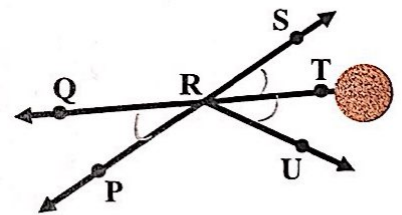
Prove:  $\angle ABC \cong \angle 2$



Statements	Reasons
① $\overline{AB} \perp \overline{CB}$ $\angle DCB$ is a right $\angle$ Diagram	① Given
② $\angle ABC$ is a right $\angle$	② If lines are $\perp$ , then they form a right $\angle$ .
③ $\angle DCB$ and $\angle 2$ are vertical $\angle$ 's	③ Assumed by diagram
④ $\angle DCB \cong \angle 2$	④ If $\angle$ 's are vertical $\angle$ 's, then they are $\cong$ .
⑤ $\angle DCB \cong \angle ABC$	⑤ If angles are right $\angle$ 's, then they are $\cong$ .
⑥ $\angle ABC \cong \angle 2$	⑥ Substitution POC

Given:  $\overline{RT}$  bisects  $\angle SRU$

Prove:  $\angle QRP \cong \angle TRU$



Statements	Reasons
① $\overline{RT}$ bisects $\angle SRU$ Diagram	① Given
② $\angle SRT \cong \angle TRU$	② If an $\angle$ is bisected, then it is divided into 2 $\cong$ angles.
③ $\angle SRT$ and $\angle QRP$ are vertical angles	③ Assumed by diagram
④ $\angle SRT \cong \angle QRP$	④ If $\angle$ 's are vertical $\angle$ 's, then they are $\cong$ .
⑤ $\angle QRP \cong \angle TRU$	⑤ Substitution POC