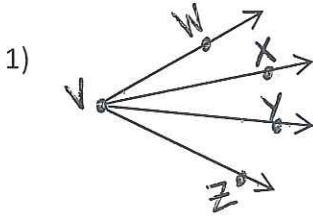


2.8 Two-Column Proof Practice

5 & 6 may want to do on own

For each proof below, use the pieces in the Proof Bank to help you fill in the 2 column proof provided. Each piece in the Proof Bank is only used once!

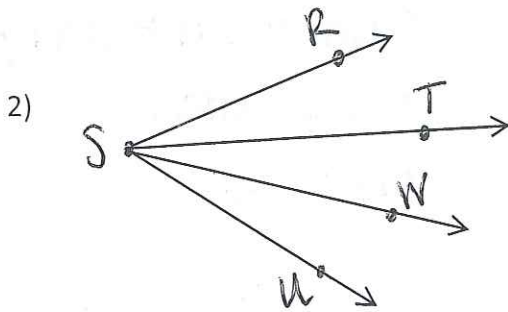


Given: \overline{VX} bisects $\angle WVY$, \overline{VY} bisects $\angle XVZ$
 Prove: $\angle WVX \cong \angle YVZ$

5/5

Proof Bank	
Definition of Angle Bisector ✓	
$\angle WVX \cong \angle XVY$ ✓	
Given ✓	
Transitive Property ✓	
$\angle WVX \cong \angle YVZ$ ✓	

Statements	Reason
1) \overline{VX} bisects $\angle WVY$, \overline{VY} bisects $\angle XVZ$	1) Given
2) $\angle XVY \cong \angle YVZ$	2) Def of \angle bisector
3) $\angle WVX \cong \angle XVY$	3) Definition of Angle Bisector
4) $\angle WVX \cong \angle YVZ$	4) Transitive Property



Given: $m\angle RSW = m\angle TSU$

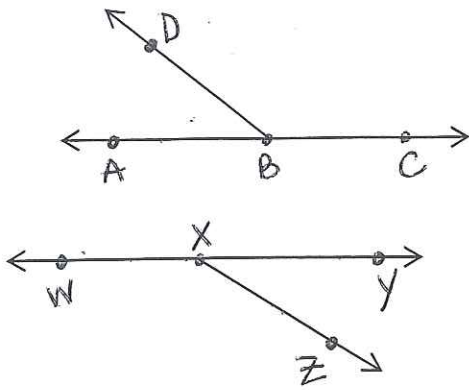
Prove: $m\angle RST = m\angle WSU$

6/6

Proof Bank	
$m\angle RST + m\angle TSW = m\angle TSW + m\angle WSU$ ✓	
Subtraction Property ✓	
Angle Addition Postulate ✓	
$m\angle RST = m\angle WSU$	
Angle Addition Postulate ✓	
$m\angle RSW = m\angle TSU$ ✓	

Statements	Reasons
1) $m\angle RSW = m\angle TSU$	1) Given
2) $m\angle RST + m\angle TSW = m\angle RSW$	2) Angle Add Post
3) $m\angle TSW + m\angle WSU = m\angle TSU$	3) Angle Add Post
4) $m\angle RST + m\angle TSW = m\angle TSW + m\angle WSU$	4) Substitution
5) $m\angle RST + m\angle TSW - m\angle TSW = m\angle TSW - m\angle TSW + m\angle WSU$	5) Subtraction Property
7) $m\angle RST = m\angle WSU$	7) Substitution

3)



Statements

Proof Bank

Subtraction Property ✓

Given ✓

$$m\angle YXZ + m\angle WXZ = 180 \checkmark$$

Definition of Congruence ✓

Substitution ✓

$$m\angle YXZ + m\angle DBC = m\angle YXZ + m\angle WXZ \checkmark$$

$$m\angle ABD + m\angle DBC = 180 \checkmark$$

$$m\angle ABD = m\angle YXZ \checkmark$$

Substitution ✓

Reasons

1) $\angle ABD \cong \angle YXZ$

$\angle ABD$ and $\angle CBD$ form a linear pair
 $\angle YXZ$ and $\angle WXZ$ form a linear pair

2) $m\angle ABD = m\angle YXZ$

3) $m\angle YXZ + m\angle WXZ = 180$

4) $m\angle ABD + m\angle DBC = 180$

5) $m\angle ABD + m\angle DBC = m\angle YXZ + m\angle WXZ$

6) $m\angle YXZ + m\angle DBC = m\angle YXZ + m\angle WXZ$

7) $m\angle YXZ - m\angle YXZ + m\angle DBC = m\angle YXZ - m\angle YXZ + m\angle WXZ$

8) $m\angle DBC = m\angle WXZ$

9) $\angle DBC \cong \angle WXZ$

1) **Given**

2) Definition of Congruence

3) Definition of Linear Pair

4) Definition of Linear Pair

5) **Substitution**

6) Substitution

7) **Subtraction Property**

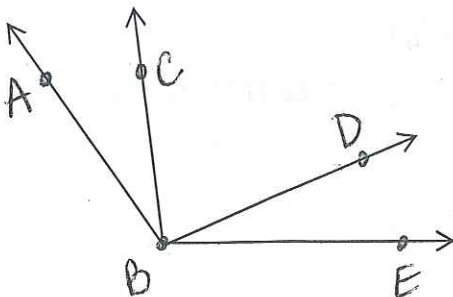
8) **Substitution**

9) **Def of \cong**

For each of the following proofs, fill in the missing Statements or Reasons. You are not given the missing pieces this time!!

4) Given: $\angle ABC \cong \angle DBE$

Prove: $\angle ABD \cong \angle CBE$



Statements

1) $\angle ABC \cong \angle DBE$

2) $m\angle ABC = m\angle DBE$

3) $m\angle ABC + m\angle CBD = m\angle ABD$

4) $m\angle CBD + m\angle DBE = m\angle CBE$

5) $m\angle DBE + m\angle CBD = m\angle ABD$

6) $m\angle CBE = m\angle ABD$

7) $\angle ABD \cong \angle CBE$

Reasons

1) **Given**

2) **Def of \cong**

3) **Angle Add Post**

4) **Angle Add Post**

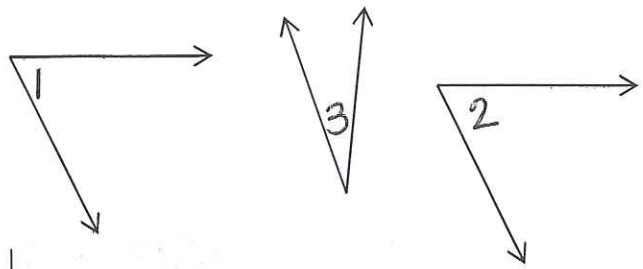
5) **Substitution**

6) **Transitive**

7) **Def of \cong**

- 5) Given: $\angle 1$ and $\angle 3$ are complementary angles
 $\angle 2$ and $\angle 3$ are complementary angles

Prove: $\angle 1 \cong \angle 2$

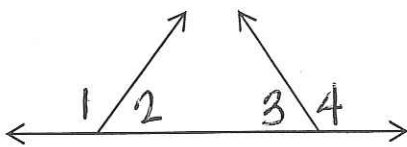


Statements	Reasons
1) $\angle 1$ & $\angle 3$ are comp Ls $\angle 2$ & $\angle 3$ are comp Ls	1) Given
2) $m\angle 1 + m\angle 3 = 90$	2) Definition of Complementary Angles
3) $m\angle 2 + m\angle 3 = 90$	3) Definition of Complementary Angles
4) $m\angle 1 + m\angle 3 = m\angle 2 + m\angle 3$	4) Substitution
5) $m\angle 1 + m\angle 3 - m\angle 3 = m\angle 2 + m\angle 3 - m\angle 3$	5) Subtraction
6) $m\angle 1 = m\angle 2$	6) Substitution
7) $\angle 1 \cong \angle 2$	7) Definition of Congruence

- 6) Given: $\angle 1$ and $\angle 2$ are supplementary angles
 $\angle 3$ and $\angle 4$ are supplementary angles

$\angle 1 \cong \angle 4$

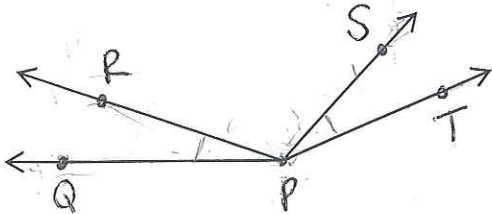
Prove: $\angle 2 \cong \angle 3$



Statements	Reasons
1) $\angle 1$ and $\angle 2$ are supplementary angles $\angle 3$ and $\angle 4$ are supplementary angles $\angle 1 \cong \angle 4$	1) Given
2) $m\angle 1 = m\angle 4$	2) Def of \cong
3) $m\angle 1 + m\angle 2 = 180$	3) Def of supp Ls
4) $m\angle 3 + m\angle 4 = 180$	4) Def of Supp Ls
5) $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 4$	5) Substitution
6) $m\angle 4 + m\angle 2 = m\angle 3 + m\angle 4$	6) Substitution
7) $m\angle 4 - m\angle 4 + m\angle 2 = m\angle 3 + m\angle 4 - m\angle 4$	7) Subtraction Prop
8) $m\angle 2 = m\angle 3$	8) Substitution
9) $\angle 2 \cong \angle 3$	9) Def of \cong

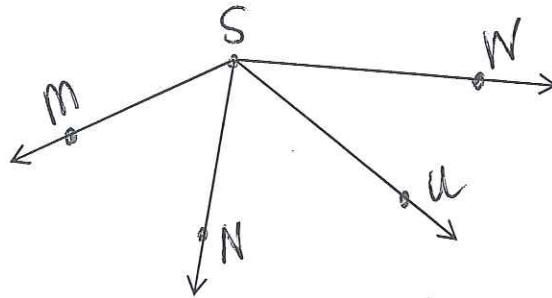
For each of the following proofs, write your own 2-Column Proof.

7) Given: $\angle QPS \cong \angle TPR$
 Prove: $\angle QPR \cong \angle TPS$



Statements	Reasons
1) $\angle QPS \cong \angle TPR$	1) Given
2) $m\angle QPS = m\angle TPR$	2) Def of \cong
3) $m\angle QPR + m\angle RPS = m\angle QPS$	3) Angle Add Post
4) $m\angle RPS + m\angle SPT = m\angle RPT$	4) Angle Add Post
5) $m\angle QPR + m\angle RPS = m\angle RPS + m\angle SPT$	5) Substitution
6) $m\angle QPR + m\angle RPS - m\angle RPS = m\angle RPS - m\angle RPS + m\angle SPT$	6) Subtraction prop
7) $m\angle QPR = m\angle SPT$	7) Substitution
8) $\angle QPR \cong \angle TPS$	8) Def of \cong

8) Given: \overrightarrow{SN} bisects $\angle MSU$, \overrightarrow{SU} bisects $\angle NSW$
 Prove: $\angle MSN \cong \angle USW$



Statements	Reasons
1) \overrightarrow{SN} bisects $\angle MSU$ & \overrightarrow{SU} bisects $\angle NSW$	1) Given
2) $\angle MSN \cong \angle NSU$	2) Def of \angle bisector
3) $\angle NSU \cong \angle USW$	3) Def of \angle bisector
4) $\angle MSN \cong \angle USW$	4) Transitive Property