Practice Proofs Proof #1:

Given: $\overline{ST} \perp \overline{TU}$; < RST is a right ang Prove: < 1 \cong < 4	gle; $< 2 \cong < 3$ T 1 2 3 4 U
Statement	Reason
1) < RST is a right angle	
2) $\overline{SR} \perp \overline{ST}$	
3) < 3 and < 4 are complementary < s	
$4) \ \overline{ST} \perp \ \overline{TU}$	
(5) < 1 and < 2 are complementary $< s$	
$6) < 2 \cong < 3$	
$7) < 1 \cong < 4$	
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Proof #2:

Given: \overrightarrow{KH} bisects < GKJ Prove: $< 9 \cong < 10$



Statements	Reasons
1) \overrightarrow{KH} bisects < GKJ	
2) < 11 ≅ < 12	
(3) < 10 and < 11 are supplements	
< 9 and < 12 are supplements	
$(4) < 9 \cong < 10$	

Proof #3:

Given: AC = BDProve: AB = CD



Statements	Reasons
1) $AC = BD$	
2) AB + BC = AC	
BC + CD = BD	
3) AB + BC = BC + CD	
4) BC = BC	
5) $AB = CD$	

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Proof #4:	E
Given: $CD \perp AB$; < 1 \cong < 4	
Prove: $< 2 \cong < 3$	$\frac{2}{12}$ $\frac{3}{4}$
Statemente	
	Reasons
1) $CD \perp AB$	
(2) < 1 and < 2 are complements	
< 3 and < 4 are complements	
$3) < 1 \cong < 4$	
$(4) < 2 \cong < 3$	
D	
$\begin{array}{c} \text{Proof #5:} \\ \text{Civen: } < 1 \approx < 2 \end{array}$	$\leftarrow \frac{2}{1}$
$Given: < 1 \cong < 3$	
Prove: $< 1 \leq < 4$	<>
	4
Statements	Reasons
$\frac{1}{1} < 1 \approx < 3$	
$\frac{1}{2} < 3 \approx 4$	
$\frac{2}{3} < 1 \simeq < 4$	
5) (1 = (1	
Droof #6.	
FIQUE #Q.	
Given: $< 1 \approx < 3$	←
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementary	\leftarrow 1
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementary	
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementary	$\begin{array}{c} & & \\$
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementary	2
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementary Statements	Reasons
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementary Statements $1) < 1 \cong < 3$	1 2 3 Reasons
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementary Statements 1) $< 1 \cong < 3$ 2) m $< 3 + m < 2 = 180^{\circ}$	Reasons
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementary Statements 1) $< 1 \cong < 3$ 2) $m < 3 + m < 2 = 180^{\circ}$ 3) $m < 1 + m < 2 = 180^{\circ}$	Reasons
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementary Statements 1) $< 1 \cong < 3$ 2) $m < 3 + m < 2 = 180^{\circ}$ 3) $m < 1 + m < 2 = 180^{\circ}$ 4) < 1 and < 2 are supplementary	Reasons
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementaryStatements1) $< 1 \cong < 3$ 2) $m < 3 + m < 2 = 180^{\circ}$ 3) $m < 1 + m < 2 = 180^{\circ}$ 4) < 1 and < 2 are supplementary	Reasons
Statements $1) < 1 \cong < 3$ $1) < 1 \cong < 3$ $2) m < 3 + m < 2 = 180^{\circ}$ $3) m < 1 + m < 2 = 180^{\circ}$ $4) < 1$ and < 2 are supplementaryProof #7:	Reasons A
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementaryStatements1) $< 1 \cong < 3$ 2) $m < 3 + m < 2 = 180^{\circ}$ 3) $m < 1 + m < 2 = 180^{\circ}$ 4) < 1 and < 2 are supplementaryProof #7:Given: \overrightarrow{BD} bisects $<$ ABE	$ \begin{array}{c} $
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementaryStatements1) $< 1 \cong < 3$ 2) $m < 3 + m < 2 = 180^{\circ}$ 3) $m < 1 + m < 2 = 180^{\circ}$ 4) < 1 and < 2 are supplementaryProof #7:Given: \overline{BD} bisects $< ABE$ Prove: $< 2 \cong < 4$	$ \begin{array}{c} $
Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementaryStatements1) $< 1 \cong < 3$ 2) $m < 3 + m < 2 = 180^{\circ}$ 3) $m < 1 + m < 2 = 180^{\circ}$ 4) < 1 and < 2 are supplementaryProof #7:Given: \overline{BD} bisects $< ABE$ Prove: $< 2 \cong < 4$	$ \begin{array}{c} $
Statements1) < 1 \cong < 3	$ \begin{array}{c} $
Statements $1) < 1 \cong < 3$ $2 = 180^{\circ}$ $3) m < 1 + m < 2 = 180^{\circ}$ $4) < 1$ and < 2 are supplementaryProof #7:Given: BD bisects < ABE	$ \begin{array}{c} 1 \\ 2 \\ 3 \\ \hline Reasons \\ \hline \hline 4 \\ 5 \\ \hline Reasons \\ \hline Reasons \\ \hline Reasons \\ \hline \end{array} $
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Given: $< 1 \cong < 3$ Prove: < 1 and < 2 are supplementaryStatements1) $< 1 \cong < 3$ 2) $m < 3 + m < 2 = 180^{\circ}$ 3) $m < 1 + m < 2 = 180^{\circ}$ 4) < 1 and < 2 are supplementaryProof #7:Given: \overline{BD} bisects $< ABE$ Prove: $< 2 \cong < 4$ Statements1) \overline{BD} bisects $< ABE$ 2) $< 1 \cong < 2$	$ \begin{array}{c} $
Statements1) < 1 \cong < 3	Reasons $Reasons$ $Reasons$ $Reasons$ $Reasons$ $Reasons$

Proof #8: Given: m< 1 = m< 2 Prove: < 4 is supplementary to < 5



Statements	Reasons
1) m< 1 = m< 2	
2) m< 1 = m< 5	
3) m< 2 = m< 5	
4) m< 2 + m< 4 = 180°	
5) m< 5 + m< 4 = 180°	
(6) < 4 is supplementary to < 5	

Proof #9:

Given: $\overline{BA} \perp \overline{AC}$; < 1 is complementary to < 3 Prove: m< 2 = m< 3



Statements	Reasons
1) $\overline{BA} \perp \overline{AC}$	
(2) < 1 and < 2 are complementary	
(3) < 1 and < 3 are complementary	
4) m< 1 + m< 2 = 90°	
$m < 1 + m < 3 = 90^{\circ}$	
5) $m < 1 + m < 2 = m < 1 + m < 3$	
6) m< 1 = m< 1	
7) m< 2 = m< 3	