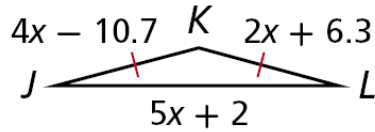


4-6: Triangle Proofs

“I WILL...

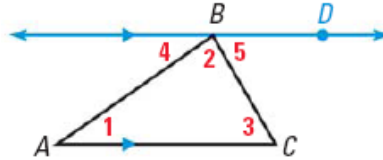
...apply my knowledge of these triangle congruence with proofs.”

Ex 1: Find the side lengths of $\triangle JKL$ and provide a two-column proof



Ex 2: Given: $\overleftrightarrow{BD} \parallel \overleftrightarrow{AC}$

Prove: $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$



Ex 3: Given: \overline{AD} bisects with \overline{BE}
 $\overline{AD} \cong \overline{DE}$; \overline{BE} bisects \overline{AD} . $\angle A \cong \angle D$.

Prove: $\triangle ABC \cong \triangle DEC$



Statements	Reasons
1) $\angle A \cong \angle D$	Given
2)	Vertical Angle Theorem
3) $\triangle ABC \cong \triangle DEC$	
4) \overline{AD} bisects with \overline{BE}	Given
5) $\overline{BC} \cong \overline{EC}$	
6) \overline{BE} bisects with \overline{AD}	Given
7)	Definition of Bisector
8) $\triangle ABC \cong \triangle DEC$	

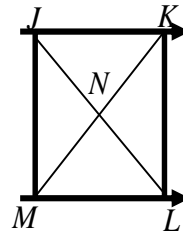
Your Turn: Given: \overline{MK}

bisects with \overline{JL}

$\overline{JK} \cong \overline{ML}$; \overline{JL} bisects \overline{MK} .

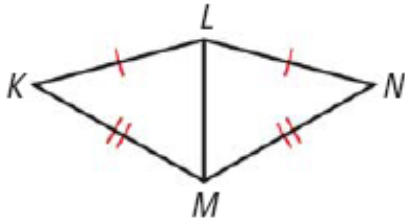
$\overline{JK} \parallel \overline{ML}$.

Prove: $\triangle JKN \cong \triangle LMN$

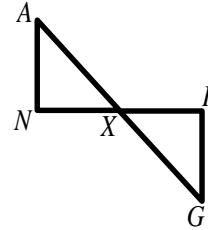


Statements	Reasons
1) $\overline{JK} \cong \overline{ML}$	Given
2) $\overline{JK} \parallel \overline{ML}$	Given
3) $\triangle JKN \cong \triangle LMN$	
4) \overline{JL} bisects \overline{MK}	Given
5)	Definition of Bisector
6) $\overline{MN} \cong \overline{KN}$	
7)	
8) $\angle KJN \cong \angle MLN$	
9) $\triangle JKN \cong \triangle LMN$	

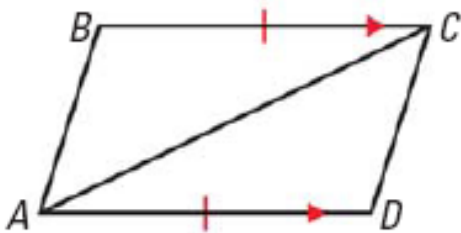
Ex 4: Given: $\overline{KL} \cong \overline{NL}$, $\overline{KM} \cong \overline{NM}$.
Prove: $\triangle KLM \cong \triangle NLM$



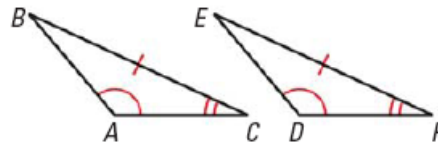
Ex 5: Given: X is the midpoint of \overline{AG} and of \overline{NR} .
Prove: $\triangle ANX \cong \triangle GRX$



Your Turn: Given: $\overline{BC} \cong \overline{DA}$ and $\overline{BC} \parallel \overline{AD}$.
Prove: $\triangle ABC \cong \triangle CDA$

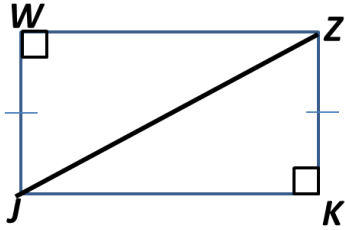


Ex 6: Given: $\angle A \cong \angle D$, $\angle C \cong \angle F$, $\overline{BC} \cong \overline{EF}$.
Prove: $\triangle ABC \cong \triangle DEF$



Ex 7: Given: $\angle W$ and $\angle K$ are right angles,
 $\overline{WJ} \cong \overline{KZ}$

Prove: $\triangle JWZ \cong \triangle ZKJ$



Your Turn: Given: $\angle S \cong \angle Q$, \overline{RP} bisects
 $\angle SRQ$

Prove: $\triangle SRP \cong \triangle QRP$

