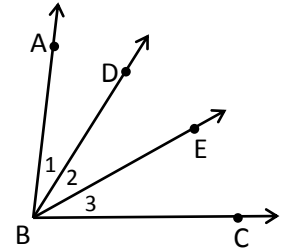


Unit 2 Geometry Proofs Packet for Homework Days 3, 4, 5

Problem Set 2-3

Complete the following 2-column proofs.

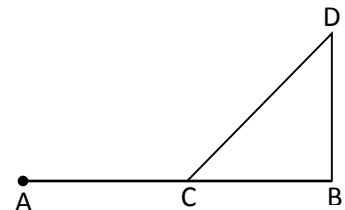
1. **Given:** $\angle 1 \cong \angle 2$, \overrightarrow{BE} bisects $\angle DBC$
Prove: $m\angle 1 = m\angle 3$



Statements	Reasons
1. $\angle 1 \cong \angle 2$	1.
2. \overrightarrow{BE} bisects $\angle DBC$	2.
3. $\angle 2 \cong \angle 3$	3.
4. $\angle 1 \cong \angle 3$	4.
5. $m\angle 1 = m\angle 3$	5.

2. **Given:** C is the midpoint of \overline{AB} , $\overline{CB} \cong \overline{DB}$

Prove: $\overline{AC} \cong \overline{DB}$

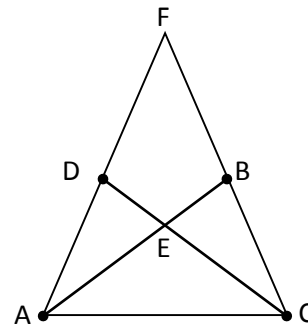


Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.

3. **Given:** D bisects \overline{AF} ; B is the midpoint of \overline{CF} ; \overline{ADF} ; \overline{CBF} ;
 $\overline{AF} \cong \overline{CF}$

Prove: $\overline{AD} \cong \overline{CB}$

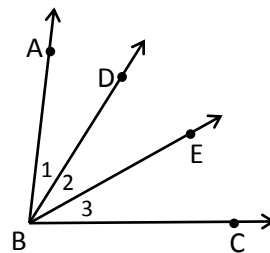
(Hint: Use Halves of Congruent Segments are Congruent)



Statements	Reasons

4. **Given:** $\angle 2 \cong \angle 1$, $\angle 1 \cong \angle 3$

Prove: \overline{BE} bisects $\angle DBC$



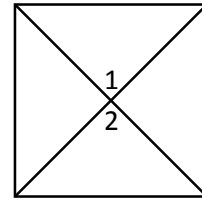
Statements	Reasons
1.	1.
2.	2.
3.	3.

Problem Set 2-4

Copy all of the 2-column proofs onto notebook paper, including the given/prove and drawing. Then complete the proofs.

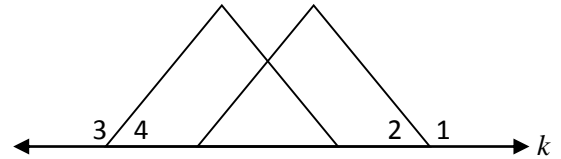
1. **Given:** $m\angle 1 = 90^\circ$; $\angle 2$ is a right angle

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



2. **Given:** $\angle 1 \cong \angle 3$, line k

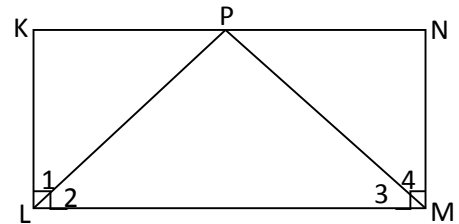
Prove: $\angle 2 \cong \angle 4$



3. **Given:** $\angle KLM$ and $\angle NML$ are right angles.

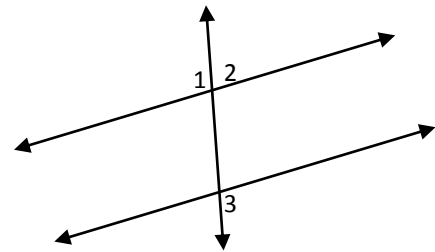
$\angle 2 \cong \angle 3$

Prove: $\angle 1 \cong \angle 4$ using angle addition postulate & congruent complements theorem



4. **Given:** $\angle 2$ and $\angle 3$ are supplementary

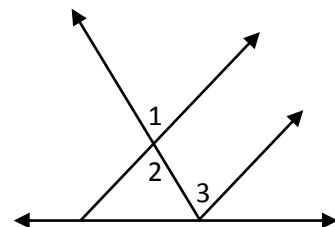
Prove: $\angle 1 \cong \angle 3$



What are angles 1 & 3 called if the lines are parallel? _____

5. **Given:** $\angle 1 \cong \angle 3$

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



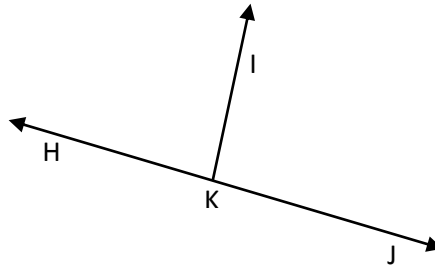
Problem Set 2-5

Copy all of the proofs onto notebook paper, including the given/prove and drawing. Then do the proof with the indicated method.

Proof #1: Flowchart

Given: $\angle HKJ$ is a straight angle.
 \overrightarrow{KI} bisects $\angle HKJ$

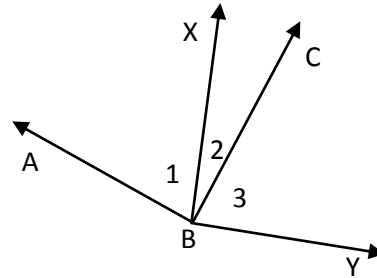
Prove: $\angle IKJ$ is a right angle



Proof #2: 2-Column Using Common/Overlapping Angle Theorem

Given: $\angle ABC$ and $\angle XBY$ are right angles

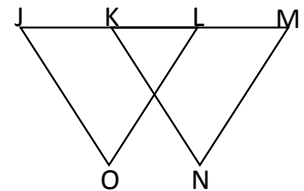
Prove: $\angle 1 \cong \angle 3$



Proof #3: Paragraph Using Common/Overlapping Segment Theorem

Given: $\overline{JL} \cong \overline{KM}$

Prove: $\overline{JK} \cong \overline{LM}$



Proof #4: Your Choice Using Common/Overlapping Segment Theorem

Given: \overline{MNOP} , $\overline{MN} \cong \overline{PO}$

Prove: $\overline{MO} \cong \overline{PN}$

