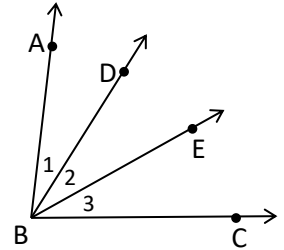


Day 1-15 LAB

Complete the following 2-column proofs.

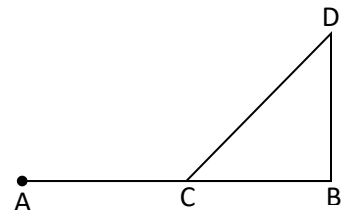
1. **Given:** $\angle 1 \cong \angle 2$, \overrightarrow{BE} bisects $\angle DBC$
Prove: $m\angle 1 = m\angle 3$



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} , $\overline{CB} \cong \overline{DB}$

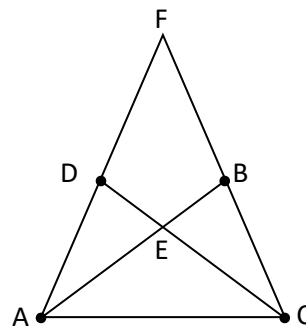
Prove: $\overline{AC} \cong \overline{DB}$



Statements	Reasons
1. C is the midpoint of \overline{AB}	1. Given
2.	2.
3. $\overline{CB} \cong \overline{DB}$	3. Given
4. $\overline{AC} \cong \overline{DB}$	4.

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

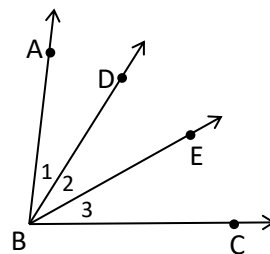
Prove: $\overline{AD} \cong \overline{CB}$



Statements	Reasons
1. D bisects \overline{AF} ; \overline{ADF}	1. Given
2.	2.
3. B is the midpoint of \overline{CF} ; \overline{CBF}	3. Given
4.	4. Midpoint \rightarrow 2 congruent collinear segments
5.	5. Given
6. $\overline{AD} \cong \overline{CB}$	6.

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

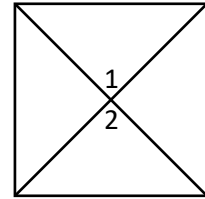
Prove: \overline{BE} bisects $\angle DBC$



Statements	Reasons
1. $\angle 2 \cong \angle 1$, $\angle 1 \cong \angle 3$	1. Given
2.	2. Transitive Property of Congruence (Step 1 \rightarrow 1)
3. \overline{BE} bisects $\angle DBC$	3.

Problem Set 1-16 LAB

Determine the main theorem that you will need to apply in each proof. Then complete the proofs.



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

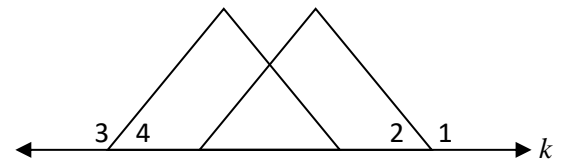
Prove: $\angle 1 \cong \angle 2$

Plan (Theorem): _____

Statements	Reasons
1. $m\angle 1 = 90^\circ$	1.
2. $\angle 1$ is a right angle	2.
3. $\angle 2$ is a right angle	3.
4. $\angle 1 \cong \angle 2$	4.

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

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



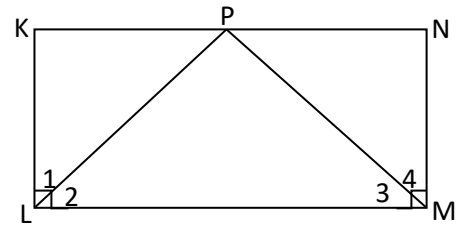
Plan (Theorem): _____

Statements	Reasons
1. line k	1.
2. $\angle 1$ & $\angle 2$ form a linear pair AND _____	2. Diagram - Two adjacent angles whose non-common sides form opposite rays are a linear pair
3. $\angle 1$ supplementary to $\angle 2$ AND _____	3.
4. _____	4. Given
5. $\angle 2 \cong \angle 4$	5.

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

$$\angle 2 \cong \angle 3$$

Prove: $\angle 1 \cong \angle 4$

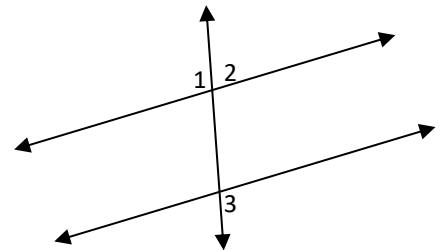


Plan (Theorem): _____
 (hint: angle addition postulate & complementary angles)

Statements	Reasons
1. $m\angle 1 + m\angle 2 = m\angle KLM$ $m\angle 4 + m\angle 3 = m\angle NML$	1.
2. $\angle KLM$ and $\angle NML$ are right angles.	2. Given
3.	3. A right angle measures 90°
4. $m\angle 1 + m\angle 2 = 90^\circ$; $m\angle 4 + m\angle 3 = 90^\circ$	4.
5.	5. Complementary Angles Sum to 90°
6. $\angle 2 \cong \angle 3$	6. Given
7. $\angle 1 \cong \angle 4$	7.

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

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



Plan (Theorem): _____

Statements	Reasons
1.	1. Diagram - Two adjacent angles whose non-common sides form opposite rays are a linear pair
2. $\angle 2$ and $\angle 1$ are supplementary	2.
3. $\angle 2$ and $\angle 3$ are supplementary	3. Given
4. $\angle 1 \cong \angle 3$	4.

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

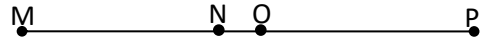
Day 1-17 LAB

Do each proof with the indicated method.

Proof #1: Flowchart Using Common/Overlapping Segment Theorem

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

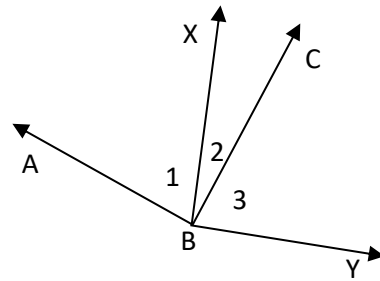
Prove: $\overline{MO} \cong \overline{PN}$



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

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

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

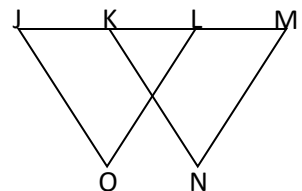


Statements	Reasons
1.	1. Given
2. $\angle ABC \cong \angle XBY$	2.
3. $\angle 2 \cong \angle 2$	3.
4.	4.

Proof #3: Paragraph Using Common/Overlapping Segment Theorem

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

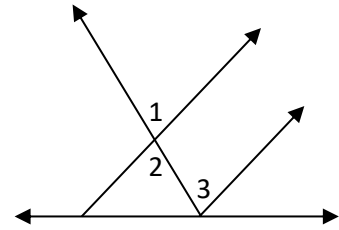
Prove: $\overline{JK} \cong \overline{LM}$



Proof #4: Paragraph (hint: angle relationships & properties)

Given: $\angle 1 \cong \angle 3$

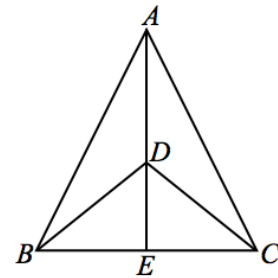
Prove: $\angle 2 \cong \angle 3$



Proof #5: 2-Column (Review - Using Congruent Supplements Theorem)

Given: $\angle BDE \cong \angle CDE$

Prove: $\angle BDA \cong \angle CDA$



Statements	Reasons
1.	1. Diagram
2. $\angle BDE$ is supplementary to $\angle BDA$ $\angle CDE$ is supplementary to $\angle CDA$	2.
3.	3. Given
4.	4.

Question #6:

Given: $\angle HKJ$ is a straight angle.

\overrightarrow{KI} bisects $\angle HKJ$

What conclusion can you make about $\angle IKJ$?

Which theorem applies? _____

