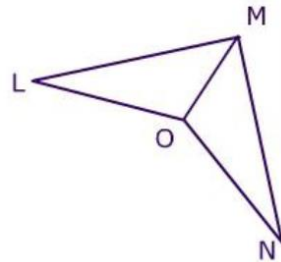


Reason Bank

Angle Angle Side (AAS)	Definition of Angle Bisector
Angle Side Angle (ASA)	Definition of Midpoint
Alternate Interior Angles Theorem	Definition of Perpendicular Lines
Alternate Exterior Angles Theorem	Given
Base Angles Theorem	Hypotenuse Leg Theorem (HL)
Base Angles Converse Theorem	Reflexive Property
Consecutive Interior Angles Theorem	Side Angle Side (SAS)
Corresponding Angles Postulate	Side Side Side (SSS)
Corresponding Parts of Congruent Triangles are congruent (CPCTC)	Vertical Angles Theorem

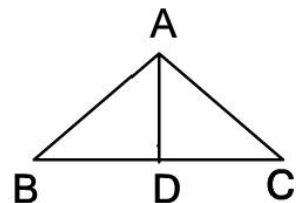
Please make sure to mark the diagrams when appropriate!

1. Given: \overline{OM} bisects $\angle LMN$ and $\angle LOM \cong \angle NOM$
Prove: $\triangle LMO \cong \triangle NMO$



Statements	Reasons
1. \overline{OM} bisects $\angle LMN$ $\angle LOM \cong \angle NOM$	1.
2. $\angle LMO \cong \angle NMO$	2.
3. $\overline{OM} \cong \overline{OM}$	3.
4. $\triangle LMO \cong \triangle NMO$	4.

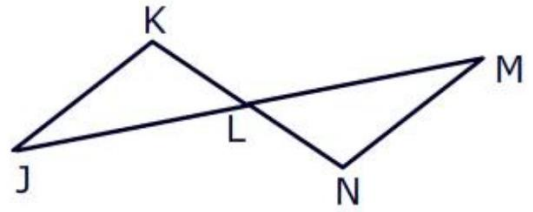
2. Given: $\overline{AD} \perp \overline{BC}$ and $\overline{BA} \cong \overline{CA}$
Prove: $\triangle BAD \cong \triangle CAD$



Statements	Reasons
1. $\overline{AD} \perp \overline{BC}$ and $\overline{BA} \cong \overline{CA}$	1.
2.	2. Definition of Perpendicular Lines
3.	3. Def. of right triangles
4.	4. Reflexive Property
5. $\triangle BAD \cong \triangle CAD$	5.

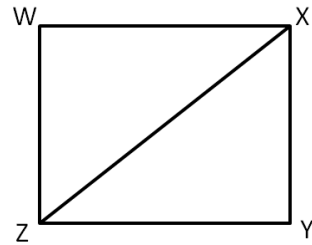
3. Given: $\overline{JK} \parallel \overline{MN}$ and L is the midpoint of \overline{KN}

Prove: $\triangle JKL \cong \triangle MLN$



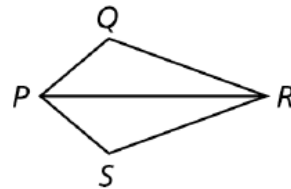
Statements	Reasons
1.	1. Given
2. L is the midpoint of \overline{KN}	2.
3.	3. Definition of Midpoint
4. $\angle JKL \cong$ _____	4.
5.	5. Vertical Angles Theorem
6. $\triangle JKL \cong \triangle MLN$	6.

4. Given: $\overline{WX} \cong \overline{YZ}$ and $\overline{WZ} \cong \overline{XY}$
 Prove: $\triangle ZWX \cong \triangle XYZ$



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

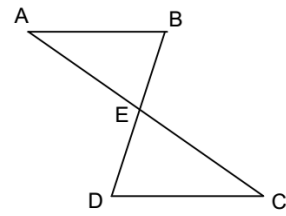
5. Given: \overline{PR} bisects $\angle QPS$ and $\angle QRS$
 Prove: $\triangle PQR \cong \triangle PSR$



Statements	Reasons
1.	1.
2. $\angle QPR \cong \angle SPR$	2.
3.	3. Definition of Angle Bisector
4. $\overline{PR} \cong \overline{PR}$	4.
5.	5.

6. Given: E is the midpoint of \overline{BD} , $\angle BAE \cong \angle DCE$

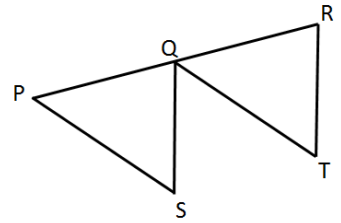
Prove: $\triangle ABE \cong \triangle CDE$



Statements	Reasons
1.	1. Given
2. $\overline{BE} \cong \overline{DE}$	2.
3. $\angle BAE \cong \angle DCE$	3.
4.	4. Vertical Angles Theorem
5. $\triangle ABE \cong \triangle CDE$	5.

7. Given: Q is the midpoint of \overline{PR} , $\overline{PS} \cong \overline{QT}$ and $\angle QPS \cong \angle RQT$

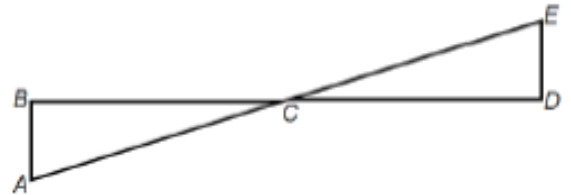
Prove: $\triangle PSQ \cong \triangle QTR$



Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

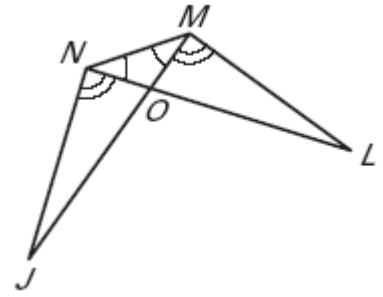
8. Given: C is the midpoint of \overline{BD}
 $\overline{AB} \perp \overline{BD}$ and $\overline{BD} \perp \overline{DE}$

Prove: $\triangle ABC \cong \triangle EDC$



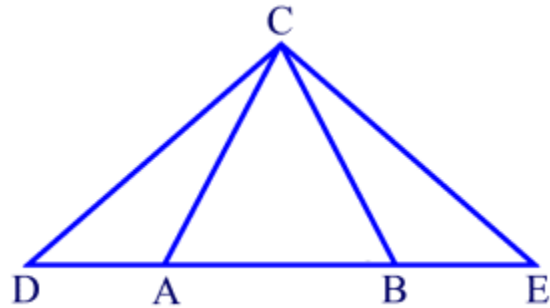
Statements	Reasons
1. C is the midpoint of \overline{BD}	1.
2.	2.
3.	3. Given
4. $\angle B$ and $\angle D$ are right angles	4.
5. $\angle B \cong \angle D$	5. All right angles are congruent
6.	6.
7. $\angle BCA \cong \angle DCE$	7.
8.	8.

9. Given: $\angle OMN \cong \angle ONM$, $\angle JNO \cong \angle LMO$
 Prove: $\triangle NOJ \cong \triangle MOL$



Statements	Reasons
1. $\angle OMN \cong \angle ONM$	1. Given
2. $\overline{NO} \cong \overline{MO}$	2. Base Angles Converse Theorem
3.	3. Vertical Angles Theorem
4. $\angle JNO \cong \angle LMO$	4.
5. $\triangle NOJ \cong \triangle MOL$	5.

10. Given: $\overline{CD} \cong \overline{CE}$, $\overline{DB} \cong \overline{EA}$
 Prove: $\triangle CDB \cong \triangle CEA$



Statements	Reasons
1. $\overline{CD} \cong \overline{CE}$	1.
2. $\overline{DB} \cong \overline{EA}$	2.
3. $\angle D \cong \angle E$	3.
4. $\triangle CDB \cong \triangle CEA$	4.

Answer Key:

- 1) 1. Given 2. Def. of Angle Bisector 3. Reflexive 4. ASA
- 2) 1. Given 2. $\angle BDA$ and $\angle ADC$ are right angles 3. $\triangle BDA$ and $\triangle ADC$ are right triangles
4. $\overline{AD} \cong \overline{AD}$ 5. H-L
- 3) 1. $\overline{JK} \overline{PMN}$ 2. Given 3. $\overline{KL} \cong \overline{LN}$ 4. $\angle JKL \cong \angle MNL$; alt. int. angles theorem
5. $\angle KLJ \cong \angle NLM$ 6. ASA
- 4) 1. $\overline{WX} \cong \overline{YZ}$; Given 2. $\overline{WZ} \cong \overline{YX}$; Given 3. $\overline{ZX} \cong \overline{ZX}$; Reflexive
4. $\triangle ZWX \cong \triangle XYZ$; SSS
- 5) 1. \overline{PR} bisects $\angle QPS$ and $\angle QRS$; Given 2. Def of angle bisector 3. $\angle QRP \cong \angle SRP$
4. Reflexive 5. $\triangle PQR \cong \triangle PSR$; ASA
- 6) 1. E is midpoint of \overline{BD} 2. Def. of midpoint 3. Given
4. $\angle BEA \cong \angle DEC$ 5. AAS
- 7) 1. Q is midpoint of \overline{PR} ; Given 2. $\overline{PQ} \cong \overline{QR}$; Def. of Midpoint 3. $\overline{PS} \cong \overline{QT}$; Given
4. $\angle QPS \cong \angle RQT$; Given 5. $\triangle PQS \cong \triangle QRT$; SAS
- 8) 1. Given 2. $\overline{BC} \cong \overline{CD}$; def. of midpoint 3. $\overline{AB} \perp \overline{BD}$ and $\overline{BD} \perp \overline{DE}$
4. Def. of perpendicular lines 6. $\triangle ABC$ and $\triangle EDC$ are right triangles; Def. of right triangles
7. VAT 8. $\triangle ABC \cong \triangle EDC$; ASA
- 9) 3. $\angle JON \cong \angle LOM$ 4. Given 5. ASA
- 10) 1. Given 2. Given 3. Base Angles Theorem 4. SAS