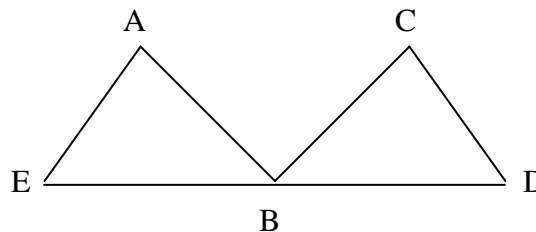


Geometry Worksheet
 Congruent Triangles #3

Name: _____

Complete the proofs.

1. Given: $\overline{AE} \cong \overline{CB}$, $\overline{AB} \cong \overline{CD}$,
 and B is the midpoint of \overline{ED}

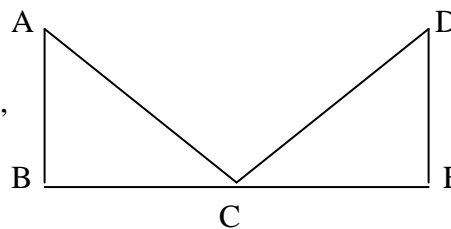


Prove: $\triangle AEB \cong \triangle CBD$

(Hint: Draw the information on the picture as you know it.)

statements	reasons
1. $\overline{AE} \cong \overline{CB}$, $\overline{AB} \cong \overline{CD}$, and B is the midpoint of \overline{ED}	1.
2. $\overline{EB} \cong \overline{DB}$	2.
3. $\triangle AEB \cong \triangle CBD$	3.

2. Given: $\overline{AB} \perp \overline{BE}$, $\overline{DE} \perp \overline{BE}$, $\overline{AC} \cong \overline{DC}$,
 and $\angle BAC \cong \angle EDC$



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

statements	reasons
1. $\overline{AB} \perp \overline{BE}$, $\overline{DE} \perp \overline{BE}$, $\overline{AC} \cong \overline{DC}$, and $\angle BAC \cong \angle EDC$	1.
2. $\angle B$ and $\angle E$ are right angles	2.
3. $\angle B \cong \angle E$	3.
4. $\triangle ABC \cong \triangle DEC$	4.

(over)

3. Given: $\overline{GK} \cong \overline{ML}$, $\angle GKM \cong \angle LMK$

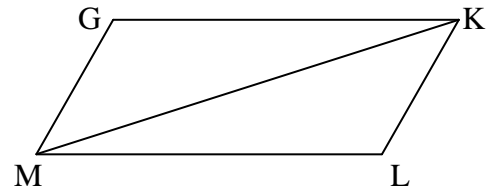
Prove: $\triangle GKM \cong \triangle LMK$

statements

1. $\overline{GK} \cong \overline{ML}$, $\angle GKM \cong \angle LMK$

2. $\overline{MK} \cong \overline{MK}$

3. $\triangle GKM \cong \triangle LMK$



reasons

1.

2.

3.

4. Given: $\angle S \cong \angle R$ and \overline{XT} bisects $\angle SXR$

Prove: $\triangle SXT \cong \triangle RXT$

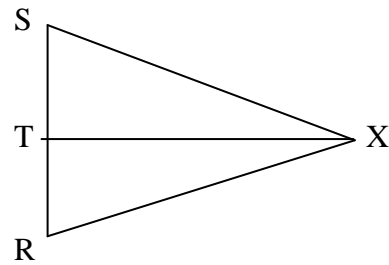
statements

1. $\angle S \cong \angle R$ and \overline{XT} bisects $\angle SXR$

2. $\angle SXT \cong \angle RXT$

3. $\overline{XT} \cong \overline{XT}$

4. $\triangle SXT \cong \triangle RXT$



reasons

1.

2.

3.

4.

5. Given: $\overline{FT} \cong \overline{FR}$ and $\overline{ST} \cong \overline{SR}$

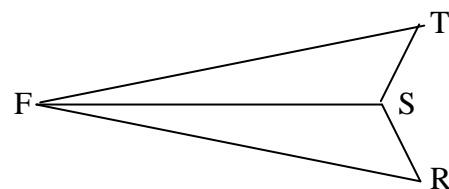
Prove: $\triangle FTS \cong \triangle FRS$

statements

1. $\overline{FT} \cong \overline{FR}$ and $\overline{ST} \cong \overline{SR}$

2.

3.



reasons

1.

2. Reflexive Property

3.

6. Given: H is the midpoint of \overline{MK} and \overline{QD}

Prove: $\triangle QMH \cong \triangle DKH$

statements

1.

2. $\overline{MH} \cong \overline{KH}$ and $\overline{QH} \cong \overline{DH}$

3. $\angle MHQ \cong \angle KHD$

4.

7. Given: \overline{SQ} bisects $\angle PSR$ and $\angle P \cong \angle R$

Prove: $\triangle SQP \cong \triangle SQR$

statements

1. \overline{SQ} bisects $\angle PSR$ and $\angle P \cong \angle R$

2.

3.

4. $\triangle SQP \cong \triangle SQR$

8. Given: \overline{RT} bisects $\angle QRS$, $\angle 1 \cong \angle 2$

Prove: $\triangle RTQ \cong \triangle RTS$

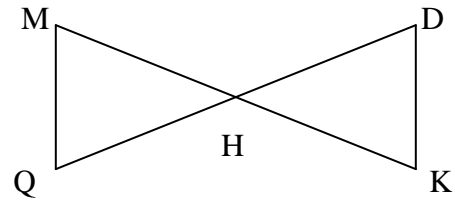
statements

1. \overline{RT} bisects $\angle QRS$, $\angle 1 \cong \angle 2$

2. $\angle QRT \cong \angle SRT$

3. $\overline{RT} \cong \overline{RT}$

4. $\triangle RTQ \cong \triangle RTS$



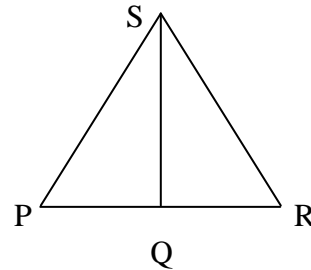
reasons

1. Given

2.

3.

4.



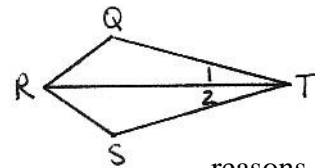
reasons

1.

2. Definition of bisect

3. Reflexive Property

4.



reasons

1.

2.

3.

4.

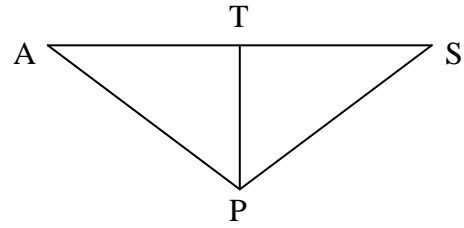
(over)

9. Given: $\overline{TP} \perp \overline{AS}$, $\overline{AP} \cong \overline{SP}$

Prove: $\triangle ATP \cong \triangle STP$

statements

1. $\overline{TP} \perp \overline{AS}$, $\overline{AP} \cong \overline{SP}$
2. $\angle ATP$ and $\angle STP$ are right angles
3. $\triangle ATP$ and $\triangle STP$ are right triangles
4. $\overline{TP} \cong \overline{TP}$
5. $\triangle ATP \cong \triangle STP$



reasons

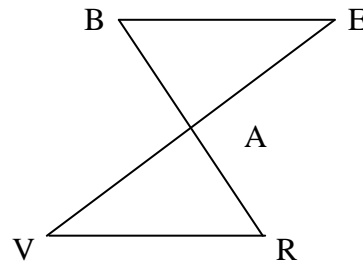
- 1.
- 2.
- 3.
- 4.
- 5.

10. Given: \overline{BR} and \overline{EV} bisect each other

Prove: $\triangle BAE \cong \triangle RAV$

statements

- 1.
2. $\overline{BA} \cong \overline{RA}$ and $\overline{EA} \cong \overline{VA}$
3. $\angle BAE \cong \angle RAV$
4. $\triangle BAE \cong \triangle RAV$

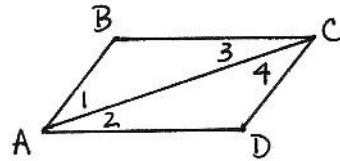


reasons

1. Given
- 2.
- 3.
- 4.

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

Prove: $\triangle ABC \cong \triangle CDA$



statements

reasons

1. $\angle 2 \cong \angle 3$, $\angle 1 \cong \angle 4$

1.

2.

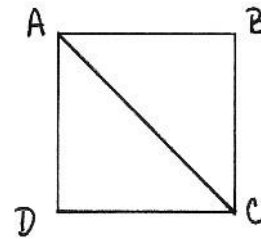
2.

3.

3.

12. Given: $\angle D$ and $\angle B$ are right angles, $\overline{AD} \cong \overline{CB}$

Prove: $\triangle ABC \cong \triangle CDA$



statements

reasons

1. $\angle D$ and $\angle B$ are right angles, $\overline{AD} \cong \overline{CB}$

1.

2. $\triangle ABC$ and $\triangle CDA$ are right triangles

2.

3.

3.

4. $\triangle ABC \cong \triangle CDA$

4.