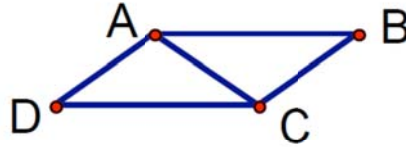


Chapter 4: Proofs with Triangles
Lesson 4-3: SSS, SAS, ASA
Homework

Name _____

#1

Given: $\overline{AB} \parallel \overline{CD}$
 $\overline{AB} \cong \overline{CD}$
Prove: $\triangle ABC \cong \triangle CDA$

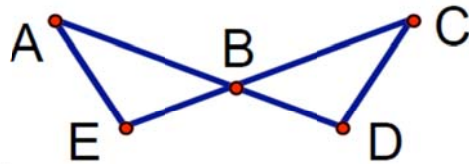


STATEMENTS

REASONS

#2

Given: $\angle A \cong \angle C$
 $\overline{AB} \cong \overline{CB}$
Prove: $\triangle ABE \cong \triangle CBD$

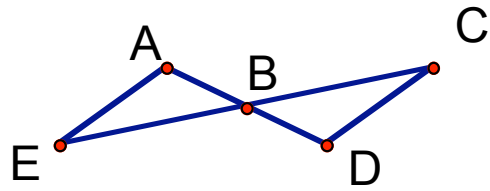


STATEMENTS

REASONS

#3

Given: B is the midpoint of \overline{AD}
B is the midpoint of \overline{EC}
Prove: $\triangle ABE \cong \triangle CBD$

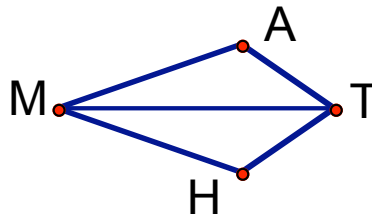


STATEMENTS

REASONS

#4

Given: $\angle AMT \cong \angle HMT$
 $\angle ATM \cong \angle HTM$
Prove: $\triangle MAT \cong \triangle MHT$

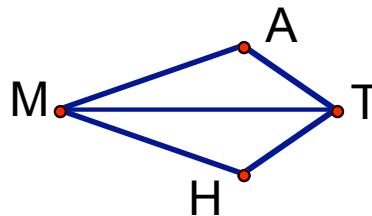


STATEMENTS

REASONS

#5

Given: $\overline{AM} \cong \overline{HM}$
 \overline{MT} bisects $\angle AMH$
Prove: $\triangle MAT \cong \triangle MHT$

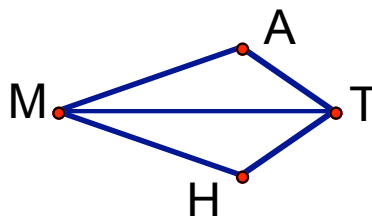


STATEMENTS

REASONS

#6

Given: $\overline{AT} \cong \overline{HT}$
 $\angle ATM \cong \angle HTM$
Prove: $\triangle MAT \cong \triangle MHT$

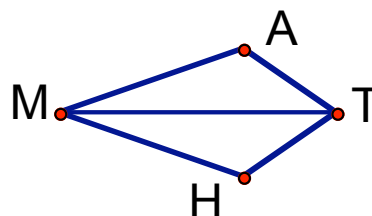


STATEMENTS

REASONS

#7

Given: \overline{MT} bisects $\angle AMH$
 \overline{MT} bisects $\angle ATH$
Prove: $\triangle MAT \cong \triangle MHT$

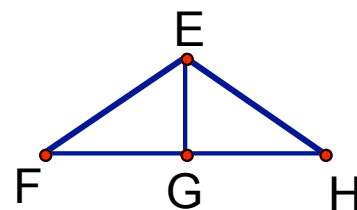


STATEMENTS

REASONS

#8

Given: G is the midpoint of \overline{FH}
 $\overline{EF} \cong \overline{EH}$
Prove: $\triangle FGE \cong \triangle HGE$

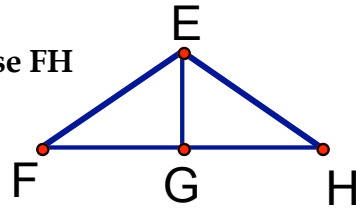


STATEMENTS

REASONS

#9

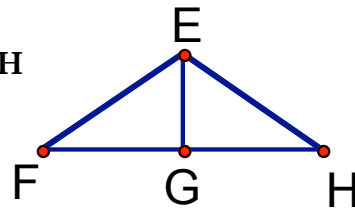
Given: $\triangle FHE$ is isosceles with base FH
 \overline{EG} bisects $\angle FEH$
Prove: $\triangle FGE \cong \triangle HGE$



STATEMENTS	REASONS

#10

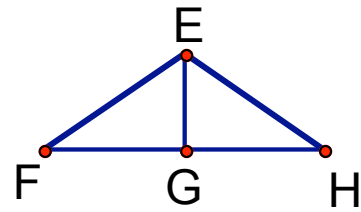
Given: $\triangle FHE$ is isosceles with base FH
 G is the midpoint of \overline{FH}
Prove: $\triangle FGE \cong \triangle HGE$



STATEMENTS	REASONS

#11

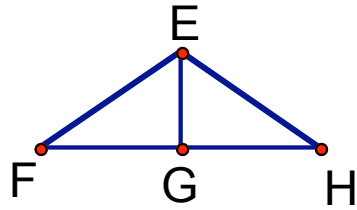
Given: \overline{EG} bisects \overline{FH}
 $\angle FGE \cong \angle HGE$
Prove: $\triangle FGE \cong \triangle HGE$



STATEMENTS	REASONS

#12

Given: \overline{EG} bisects $\angle FEH$
 $\overline{EF} \cong \overline{EH}$
Prove: $\triangle FGE \cong \triangle HGE$

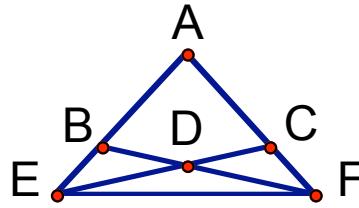


STATEMENTS

REASONS

#13

Given: $\overline{AC} \cong \overline{AB}$
 $\overline{AE} \cong \overline{AF}$
Prove: $\triangle ACE \cong \triangle ABF$

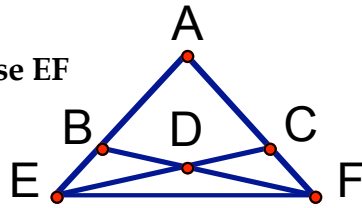


STATEMENTS

REASONS

#14

Given: $\triangle AEF$ is isosceles with base EF
 $\angle AEC \cong \angle AFB$
Prove: $\triangle ACE \cong \triangle ABF$

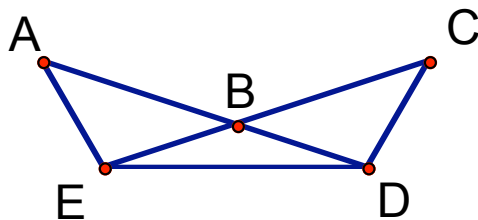


STATEMENTS

REASONS

#15

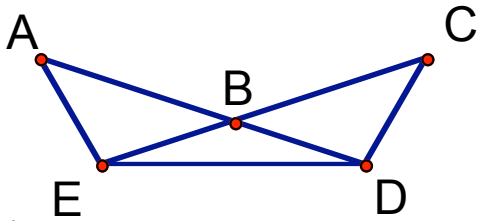
Given: $\overline{AD} \cong \overline{CE}$
 $\overline{AE} \cong \overline{CD}$
Prove: $\triangle AED \cong \triangle CDE$



STATEMENTS	REASONS

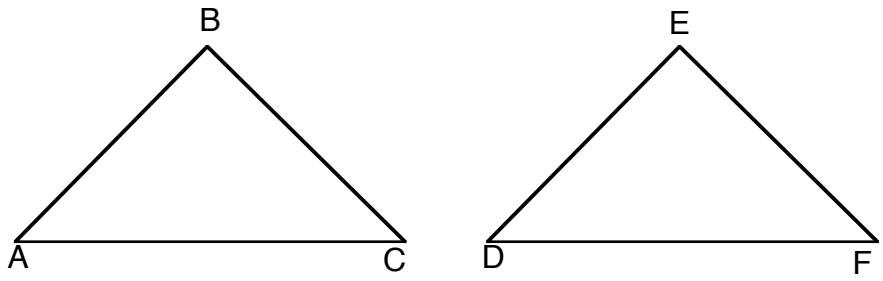
#16

Given: $\triangle BED$ is isosceles
 $\overline{AB} \cong \overline{CB}$
Prove: $\triangle ABE \cong \triangle CBE$



STATEMENTS	REASONS

Name the third piece of information needed for the triangles to be congruent. Place your answer in the space provided.



Use this diagram for problems 17 – 21.

17. Given: $\overline{AB} \cong \overline{DE}$
 $\overline{BC} \cong \overline{EF}$

17.

Prove: $\triangle ABC \cong \triangle DEF$ by SSS

18. Given: $\angle A \cong \angle D$
 $\angle C \cong \angle F$ 18.

Prove: $\triangle ABC \cong \triangle DEF$ by ASA

19. Given: $\overline{AC} \cong \overline{DF}$
 $\overline{BC} \cong \overline{EF}$ 19.

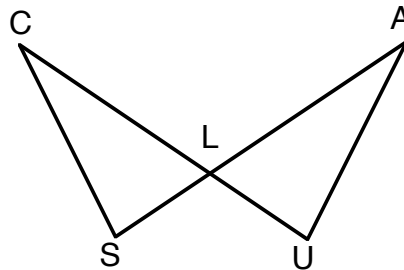
Prove: $\triangle ABC \cong \triangle DEF$ by SAS

20. Given: $\overline{AB} \cong \overline{DE}$
 $\angle A \cong \angle D$ 20.

Prove: $\triangle ABC \cong \triangle DEF$ by SAS

21. Given: $\overline{BC} \cong \overline{EF}$
 $\angle B \cong \angle E$ 21.

Prove: $\triangle ABC \cong \triangle DEF$ by ASA



Use this diagram for problems 22 – 24

22. Given: $\overline{CL} \cong \overline{AL}$ 22.

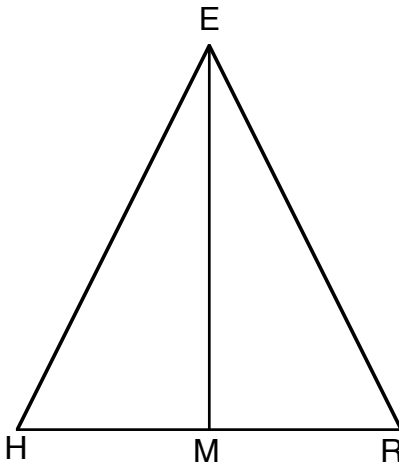
Prove: $\triangle CLS \cong \triangle ALU$ by ASA

23. Given: $\overline{SL} \cong \overline{UL}$ 23.

Prove: $\triangle CLS \cong \triangle ALU$ by SAS

24. Given: $\overline{CL} \cong \overline{AL}$
 $\overline{SL} \cong \overline{UL}$ 24.

Prove: $\triangle CLS \cong \triangle ALU$ by SSS



Use this diagram for problems 25 – 27.

25. Given: $\overline{EM} \perp \overline{HR}$ 25.

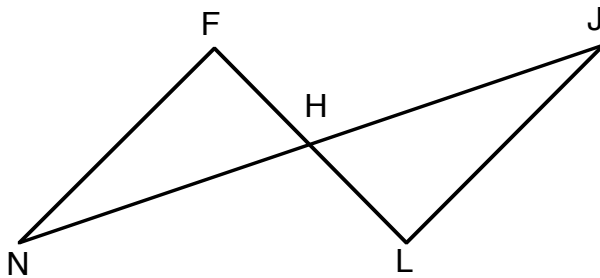
Prove: $\triangle HEM \cong \triangle REM$ by SAS

26. Given: $\overline{EM} \perp \overline{HR}$ 26.

Prove: $\triangle HEM \cong \triangle REM$ by ASA

27. Given: \overline{EM} bisects \overline{HR} 27.

Prove: $\triangle HEM \cong \triangle REM$ by SSS



Use this diagram for problems 28 – 29.

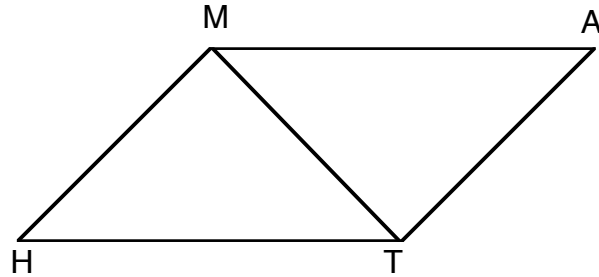
28. Given: H is the midpoint of \overline{NJ} 28.

Prove: $\triangle FHN \cong \triangle LHJ$ by ASA

29. Given: H is the midpoint of \overline{NJ}

29.

Prove: $\triangle FHN \cong \triangle LHJ$ by SAS



Use this diagram for problems 30 – 31.

30. Given: $\overline{AM} \cong \overline{HT}$

30.

Prove: $\triangle AMT \cong \triangle HTM$ by SSS

31. Given: $\angle ATM \cong \angle HMT$

31.

Prove: $\triangle AMT \cong \triangle HTM$ by ASA