

1/11/18 Aim: Proving triangles congruent
 Do now take out cheat sheet
 Homework Worksheet
 Quest Friday

Jan 8-2:29 PM

1

Statements	Reason
① $AC \cong BC$	① given
② CD bisects $\angle ACB$	② given
③ $\angle 1 \cong \angle 2$	③ An \angle bisector divides an \angle into \cong \angle 's.
④ $CD \cong CD$	④ Reflexive property
⑤ $\triangle ACD \cong \triangle BCD$	⑤ SAS \cong SAS

Given: $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$
 \overline{CD} bisects $\angle ACB$
 Prove: $\triangle ACD \cong \triangle BCD$

Jan 7-2:12 PM

2. Given:
 Isosceles triangle $\triangle ABC$ with $\overline{CA} \cong \overline{CB}$
 D is the midpoint of \overline{AB}
 Prove: $\triangle ACD \cong \triangle BCD$

Statements	Reason
① Isosceles $\triangle ABC$ w/ $\overline{CA} \cong \overline{CB}$	① given
② D is the midpoint of \overline{AB}	② given
③ $CD \cong CD$	③ reflexive
④ $AD \cong DB$	④ A midpt divides a line into 2 \cong segments
⑤ $\triangle ACD \cong \triangle BCD$	⑤ SSS \cong SSS

Jan 7-2:12 PM

3) Given: Isosceles $\triangle ABC$ with $\overline{CA} \cong \overline{CB}$
 \overline{CD} is the altitude to \overline{AB}
 Prove: $\triangle ACD \cong \triangle BCD$

Statements	Reason
① Isos. \triangle w/ $\overline{CA} \cong \overline{CB}$	① given
② \overline{CD} is altitude to \overline{AB}	② given
③ $CD \perp AB$	③ An altitude forms \perp lines
④ $\angle 1$ and $\angle 2$ are 90°	④ \perp lines form right \angle 's
⑤ $\angle 1 \cong \angle 2$	⑤ All right \angle 's \cong
⑥ $CD \cong CD$	⑥ Reflexive
⑦ $\triangle ACD \cong \triangle BCD$	⑦ HL \cong HL

Jan 7-2:12 PM

1 Given: \overline{BA} bisects \overline{CD}
 $\overline{AC} \perp \overline{CD}$
 $\overline{BD} \perp \overline{CD}$
 Prove: $\triangle ACE \cong \triangle BDE$

Statements	Reason
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Jan 7-2:12 PM

2 Given: $\overline{BA} \cong \overline{DA}$
 \overline{CA} bisects $\angle BAD$
 Prove: $\triangle CBA \cong \triangle CDA$

Statements	Reason
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Jan 7-2:12 PM

3) Given: \overline{BC} and \overline{AE} bisect each other at D
 Prove: $\triangle ABD \cong \triangle CED$

Statements	Reason

Jan 7-2:19 PM

Statements	Reason
1. \overline{AD} bisect \overline{BC}	
2. $\overline{BE} \cong \overline{CE}$	
3. E is the midpoint of \overline{AD}	
4. $\overline{AE} \cong \overline{DE}$	
5. $\angle AEB$ and $\angle DEC$ are vertical angles	
6. $\angle AEB$ and $\angle DEC$	
7. $\triangle AEB \cong \triangle DEC$	

Given: \overline{AD} bisect \overline{BC}
 E is the midpoint of \overline{AD}
 Prove: $\triangle AEB \cong \triangle DEC$

Jan 7-2:19 PM

Given: $\angle CDB \cong \angle ABD$
 $\angle CBD \cong \angle ADB$
 Prove: $\triangle ADB \cong \triangle CBD$

Statements	Reason
1. $\angle CDB \cong \angle ABD$	1.
2. $\angle CBD \cong \angle ADB$	2.
3.	3. Reflexive postulate
4. $\triangle ADB \cong \triangle CBD$	4.

Jan 7-2:46 PM

Given: $\overline{CD} \perp \overline{AB}$
 D is the midpoint of \overline{AB}
 Prove: $\triangle CAD \cong \triangle CBD$

Statements	Reason
1. $\overline{CD} \perp \overline{AB}$	
2. $\angle CDA$ and $\angle CDB$ are right angle	
3. $\angle CDA \cong \angle CDB$	
4. D is the midpoint of \overline{AB}	
5. $\overline{AD} \cong \overline{BD}$	
6. $\overline{CD} \cong \overline{CD}$	
7. $\triangle CAD \cong \triangle CBD$	

Jan 7-2:46 PM

Given: T is the midpoint of \overline{RS}
 \overline{RS} bisect \overline{PQ}
 $\overline{PS} \cong \overline{QR}$
 Prove: $\triangle PST \cong \triangle QRT$

Statements	Reason
1. T is the midpoint of \overline{RS}	
2. $\overline{RT} \cong \overline{ST}$	
3. \overline{RS} bisect \overline{PQ}	
4.	4. A bisector divides a segment into two congruent segments.
5. $\overline{PS} \cong \overline{QR}$	
6. $\triangle PST \cong \triangle QRT$	

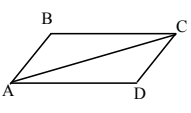
Jan 7-2:46 PM

Given: \overline{AC} and \overline{ED} bisect each other
 Prove: $\triangle AEB \cong \triangle DCB$

Statements	Reason

Jan 7-2:46 PM

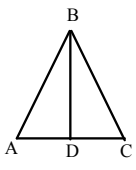
Given: $ABCD$ is a quadrilateral
 $\overline{AB} \cong \overline{CD}$
 $\overline{BC} \cong \overline{AD}$
 Prove: $\triangle ABC \cong \triangle CDA$



	Statements	Reason

Jan 7-2:46 PM

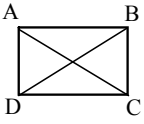
Given: \overline{BD} is the median of $\triangle ABC$
 $\overline{BD} \perp \overline{AC}$
 Prove: $\triangle ABD \cong \triangle CBD$



	Statements	Reason

Jan 7-2:46 PM

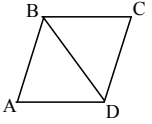
Given: E is the midpoint of \overline{DB}
 \overline{DB} bisects \overline{AC}
 Prove: $\triangle AED \cong \triangle BEC$



	Statements	Reason

Jan 7-2:46 PM

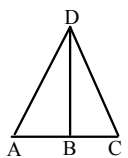
Given: $\overline{AB} \cong \overline{CD}$
 $\overline{BC} \cong \overline{AD}$
 Prove: $\triangle ABD \cong \triangle CDB$



	Statements	Reason

Jan 7-2:46 PM

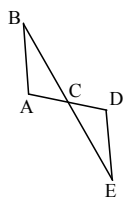
Given: In $\triangle ACD$, DB is the altitude and the median to side AC .
 Prove: $\triangle ADB \cong \triangle CDB$



	Statements	Reason

Jan 7-2:46 PM

Given: BE bisect AD
 $\angle B \cong \angle E$
 Prove: $\triangle ABC \cong \triangle DEC$

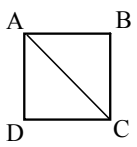


	Statements	Reason

Jan 8-8:32 AM

Given: $\overline{AB} \perp \overline{BC}$, $\overline{CD} \perp \overline{AD}$
 $\overline{AD} \cong \overline{CB}$
 Prove: $\triangle ADC \cong \triangle CBA$

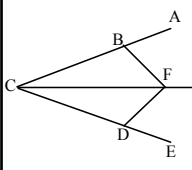
Statements	Reason



Jan 8-8:32 AM

Given: \overline{CF} bisects $\angle ACE$
 $\overline{BC} \cong \overline{CD}$
 Prove: $\triangle BCF \cong \triangle DCF$

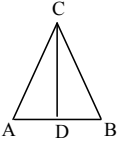
Statements	Reason



Jan 8-8:32 AM

Given: $\overline{CD} \perp \overline{AB}$
 D is the midpoint of \overline{AB}
 Prove: $\triangle ADC \cong \triangle BDC$

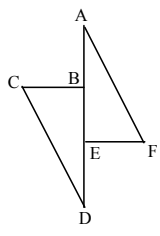
Statements	Reason



Jan 7-2:46 PM

Given: $\overline{AB} \cong \overline{ED}$
 $\overline{FE} \cong \overline{CB}$
 $\overline{FE} \perp \overline{AD}$
 $\overline{CB} \perp \overline{AD}$
 Prove: $\triangle AEF \cong \triangle CBD$

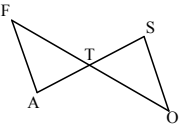
Statements	Reason



Jan 7-2:46 PM

Given: \overline{FO} bisects \overline{AS}
 $\angle A \cong \angle S$
 Prove: $\triangle FAT \cong \triangle OST$

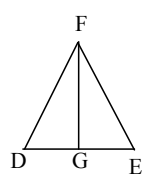
Statements	Reason



Jan 7-2:46 PM

Given: $\overline{FG} \perp \overline{DE}$
 G is the midpoint of \overline{DE}
 Prove: $\triangle DFG \cong \triangle EFG$

Statements	Reason



Jan 7-2:46 PM

5

Given: $\overline{SU} \cong \overline{QR}$
 $\overline{PS} \cong \overline{RT}$
 $\angle PSU \cong \angle QRT$

Prove by any method: $\triangle PQR \cong \triangle STU$

Jan 7-2:46 PM

Statements	Reason
Given: \overline{PT} bisects \overline{QS}	
$\overline{PQ} \perp \overline{QS}$	
$\overline{TS} \perp \overline{QS}$	
Prove: $\triangle PQR \cong \triangle TSR$	

Jan 7-2:46 PM

Statements	Reason
Given: $\angle A \cong \angle D$	
$\overline{AE} \cong \overline{CD}$	
$\angle AEF \cong \angle BCD$	
Prove: $\triangle ABC \cong \triangle DFE$	

Jan 7-2:46 PM

Statements	Reason
Given: S is the midpoint of \overline{PR}	
\overline{QS} is the altitude from Q to \overline{PR}	
Prove: $\triangle PQS \cong \triangle RSQ$	

Jan 7-2:46 PM

Statements	Reason
Given: \overline{SQ} bisects $\angle PSR$	
$\angle P \cong \angle R$	
Prove: $\triangle PQS \cong \triangle RQS$	

Jan 7-2:46 PM

Statements	Reason
Given: $\overline{GA} \cong \overline{FE}$	
D is the midpoint of \overline{AE}	
$\overline{GA} \perp \overline{AE}$	
$\overline{FE} \perp \overline{AE}$	
Prove: $\triangle DAG \cong \triangle DEF$	

Jan 7-2:46 PM

Given: $\angle B \cong \angle F$
 $\angle A \cong \angle E$
 $\overline{BD} \cong \overline{FC}$
 Prove: $\triangle ABC \cong \triangle EFD$

Statements	Reason

Jan 7-2:46 PM

Given: $\overline{BD} \perp \overline{AC}$
 $\angle A \cong \angle C$
 Prove: $\triangle ABD \cong \triangle CBD$

Statements	Reason

Jan 7-2:46 PM

Given: S is the midpoint of \overline{PR}
 $\overline{QA} \cong \overline{QB}$
 $\overline{AP} \cong \overline{BR}$
 Prove: $\triangle QPS \cong \triangle QRS$

Statements	Reason

Jan 7-2:46 PM

Given: $\angle Q \cong \angle S$
 $\overline{PT} \cong \overline{TS}$
 Prove: $\triangle PQR \cong \triangle TSR$

Statements	Reason

Jan 7-2:46 PM

Given: \overline{BD} bisects $\angle ABC$
 \overline{BD} bisects $\angle ADC$
 Prove: $\triangle ABD \cong \triangle CBD$

Statements	Reason

Jan 7-2:46 PM

Given: FO bisects AS
 $\angle A \cong \angle S$
 Prove: $\triangle FAO \cong \triangle SOA$

Statements	Reason

Jan 7-12:51 PM

2

Statements

Reason

Given: S is the midpoint of \overline{PR}
 \overline{QS} is the altitude from Q to \overline{PR}
 Prove: $\triangle PQS \cong \triangle RQS$

Jan 7-1:00 PM

1

Statements

Reason

Given: $\overline{GA} \cong \overline{FE}$
 D is the midpoint of \overline{AE}
 $GA \perp AE$
 $FE \perp AE$
 Prove: $\triangle GAD \cong \triangle FED$

Jan 7-1:07 PM

Statements

Reason

Given: $\overline{AE} \cong \overline{FD}$
 $\overline{BE} \cong \overline{CF}$
 $\overline{BE} \perp \overline{AD}$
 $\overline{CF} \perp \overline{AD}$
 Prove: $\triangle AEG \cong \triangle CBD$

Jan 7-1:26 PM

5

Statements

Reason

Given: $\angle BCE \cong \angle DCE$
 AC bisects $\angle BAD$
 Prove: $\triangle ABC \cong \triangle ADC$

Jan 7-2:12 PM

Given: $\overline{AB} \parallel \overline{DC}$
 $\overline{AD} \cong \overline{BC}$
 Prove: $\triangle ADC \cong \triangle CBA$

Statements

Reason

Jan 8-8:32 AM

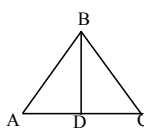
Given: $\overline{AB} \parallel \overline{DC}$
 $\overline{AD} \parallel \overline{BC}$
 Prove: $\triangle ADC \cong \triangle CBA$

Statements

Reason

Jan 8-8:33 AM

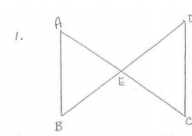
Given: D is the midpoint of \overline{AC}
 $\overline{AB} \cong \overline{BC}$
 Prove: $\triangle ABD \cong \triangle CBD$



	Statements	Reason

Jan 8-8:33 AM

1.



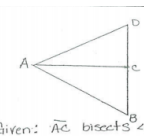
Given: \overline{AD} bisects \overline{BC} at E.
 \overline{AC} bisects \overline{BD} at E.

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

	Statements	Reason

Jan 8-8:33 AM

2.



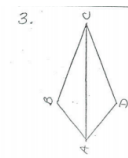
Given: \overline{AC} bisects $\angle BAD$
 \overline{AC} is \perp to \overline{BD}

Prove: $\triangle ABC \cong \triangle ADC$

	Statements	Reason

Jan 8-8:33 AM

3.



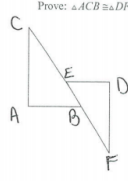
Given: \overline{AC} bisects $\angle C$
 \overline{AC} bisects $\angle A$

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

	Statements	Reason

Jan 8-8:33 AM

Name: _____
 Geometry

	Statements	Reason
<p>(1) Given:</p> <p>$\overline{CA} \perp \overline{AB}$ $\overline{ED} \perp \overline{DF}$ $\overline{ED} \parallel \overline{AB}$ $\overline{CE} \cong \overline{BF}$</p> <p>Prove: $\triangle ACB \cong \triangle DFE$</p> 		

Jan 8-8:34 AM