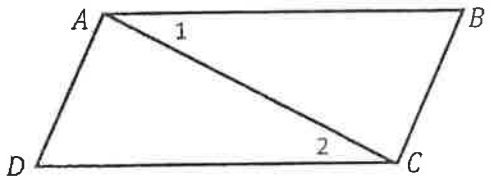
Math 2
Unit 6 –Triangles & Congruence
Lesson 3 → Triangle Congruence Proofs

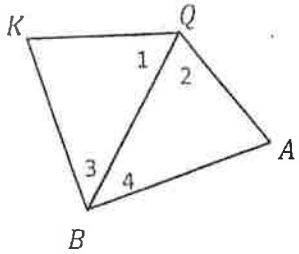
Name_____
Date_____ Pd_____

Fill in the missing statements and reasons.



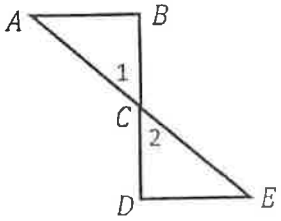
1. **Given:** $\overline{AB} \parallel \overline{DC}$, $\angle B \cong \angle D$
Prove: $\overline{BC} \cong \overline{DA}$

Statements	Reasons
1. _____	1. Given
2. $\angle 1 \cong \angle 2$	2. _____
3. $\overline{AC} \cong \overline{AC}$	3. _____
4. $\Delta ABC \cong \Delta CDA$	4. _____ Congruence
5. _____	5. CPCTC



2. **Given:** $\overline{QK} \cong \overline{QA}$, $\overline{QB}$ bisects $\angle KQA$
Prove: $\overline{KB} \cong \overline{AB}$

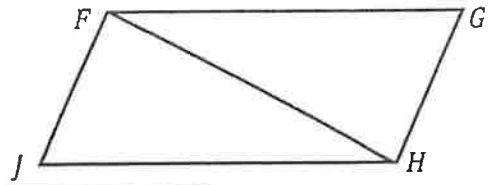
Statements	Reasons
1. _____	1. Given
2. _____	2. Definition of Angle Bisector
3. _____	3. Reflexive Property of Congruence
4. $\Delta KBQ \cong \Delta$ _____	4. _____ Congruence
5. _____	5. _____



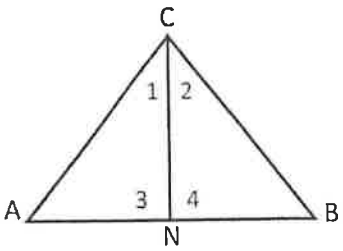
3. **Given:** $\overline{BD} \perp \overline{AB}$, $\overline{BD} \perp \overline{DE}$, $\overline{AB} \cong \overline{DE}$
Prove: $\angle A \cong \angle E$

Statements	Reasons
1. _____	1. _____
2. $\angle B$ & $\angle D$ are right angles	2. Definition of _____
3. _____	3. All _____ angles are congruent
4. $\angle 1 \cong \angle 2$	4. _____
5. $\Delta ABC \cong \Delta$ _____	5. _____ Congruence
6. _____	6. _____

4. **Given:** $\overline{FJ} \cong \overline{GH}$, $\angle JFH \cong \angle GHF$
Prove: $\overline{FG} \cong \overline{JH}$



Statements	Reason
1. _____	1. _____
2. $\overline{FH} \cong \overline{HF}$	2. _____
3. Δ_____ $\cong \Delta$ _____	3. _____ Congruence
4. _____	4. _____



6. **Given:** $\overline{CN} \perp \overline{AB}$, $\overline{CN}$ bisects $\angle ACB$
Prove: $\overline{AC} \cong \overline{CB}$

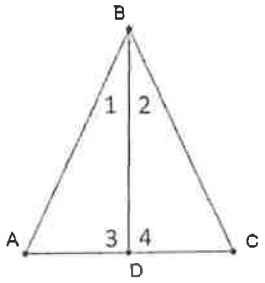
Statements	Reasons
1. _____	1. _____
2. $\angle 3$ & $\angle 4$ are right angles	2. Definition of _____
3. _____	3. All right angles are _____
4. _____	4. Definition of _____
5. _____	5. _____
6. $\Delta ANC \cong \Delta$_____	6. _____ Congruence
7. $\overline{AC} \cong \overline{CB}$	7. _____

Math 2
Unit 6 –Triangles & Congruence
Lesson 3 → Triangle Congruence Proofs HOMEWORK

Name_____
Date_____ Pd____

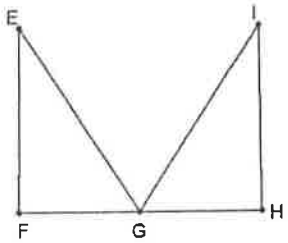
➢ Complete the following proofs. Draw and mark each picture before writing the proof.

1. Given: $\overline{BD} \perp \overline{AC}$
   $\overline{AD} \cong \overline{DC}$
   Prove: $\angle 1 \cong \angle 2$



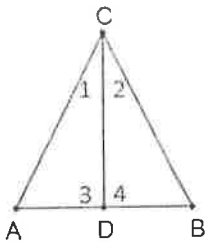
Statement	Reason
1.	
2.	
3.	
4.	
5.	
6.	

2. Given: G *is the midpoint of* $\overline{FH}$
   $\overline{EF} \cong \overline{LH}$
   $\angle F \cong \angle H$
   Prove: $\overline{EG} \cong \overline{LG}$



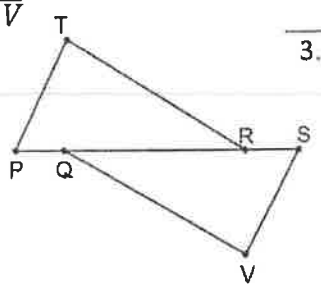
Statement	Reason
1.	
2.	
3.	
4.	

3. Given: $\overline{CD}$ *bisects* $\angle ACB$
   $\angle A \cong \angle B$
   Prove: $\overline{AD} \cong \overline{DB}$



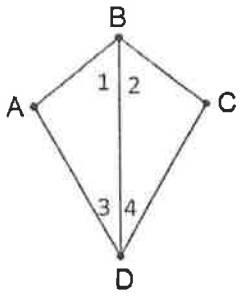
Statement	Reason
1.	
2.	
3.	
4.	
5.	

4. Given: $\overline{PR} \cong \overline{QS}$
$\angle P \cong \angle S$
$\angle T \cong \angle V$
Prove: $\overline{TR} \cong \overline{QV}$



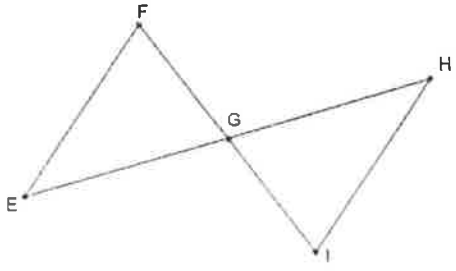
Statement	Reason
1.	
2.	
3.	

5. Given: $\overline{BD}$ *bisects* $\angle ABC$
$\overline{BA} \cong \overline{CB}$
Prove: $\angle ADB \cong \angle CDB$



Statement	Reason
1.	
2.	
3.	
4.	
5.	

6. **Given:** *G is the midpoint of* $\overline{FI}$
$\angle F \cong \angle I$
Prove: $\overline{EF} \cong \overline{IH}$



Statement	Reason
1.	
2.	
3.	
4.	
5.	

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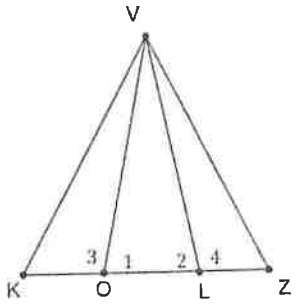
Math 2
Unit 6 –Triangles & Congruence
Lesson 4 → More Triangle Congruence Proofs

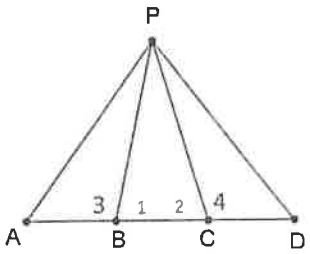
Name_____
Date_____ Pd_____

1. **Given:** $\angle 3 \cong \angle 4$
   $\angle K \cong \angle Z$
   $\overline{KV} \cong \overline{ZV}$
   Prove: $\overline{KO} \cong \overline{ZL}$



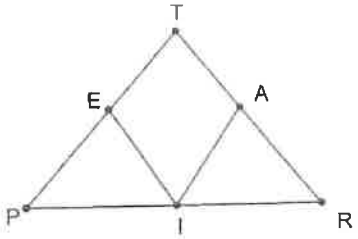
Statement	Reason
1.	
2.	
3.	

2. **Given:** $\overline{PB} \cong \overline{PC}$
   $\overline{AB} \cong \overline{CD}$
   $\overline{AP} \cong \overline{PD}$
   Prove: $\angle 3 \cong \angle 4$



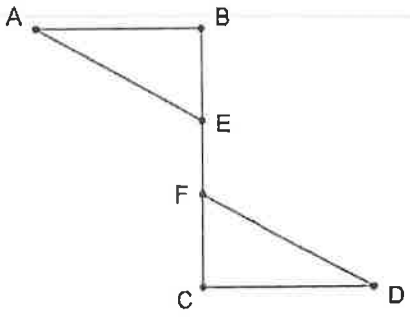
Statement	Reason
1.	
2.	
3.	

3. **Given:** $\angle P \cong \angle R$
   $\overline{EP} \cong \overline{AR}$
   I *is the midpoint of* $\overline{PR}$
   Prove: $\overline{EI} \cong \overline{AI}$



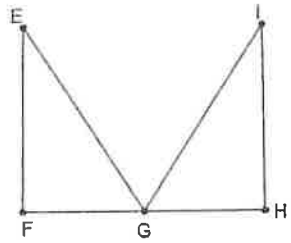
Statement	Reason
1.	
2.	
3.	
4.	

4. **Given:** $\overline{AB} \cong \overline{CD}$
$\overline{AB} \perp \overline{BC}$
$\overline{CD} \perp \overline{BC}$
$\overline{BE} \cong \overline{CF}$
Prove: $\angle A \cong \angle D$



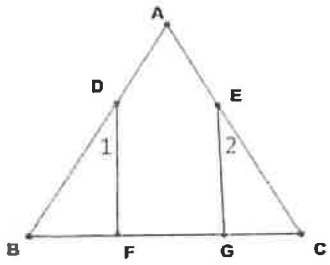
Statement	Reason
1.	
2.	
3.	
4.	
5	

5. **Given:** $\angle F$ *and* $\angle H$ *are right angles*
G *is the midpoint of* $\overline{FH}$
$\overline{EF} \cong \overline{LH}$
Prove: $\angle E \cong \angle L$



Statement	Reason
1.	
2.	
3.	
4.	
5.	

6. **Given:** $\angle B \cong \angle C$
$\overline{BF} \cong \overline{GC}$
$\overline{BD} \cong \overline{EC}$
Prove: $\angle 1 \cong \angle 2$

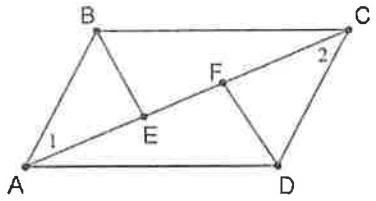


Statement	Reason
1.	
2.	
3.	

Math 2
Unit 6 –Triangles & Congruence
Lesson 4 → More Triangle Congruence Proofs HOMEWWORK

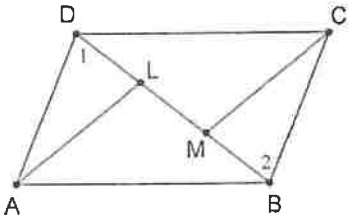
Name_____
Date_____Pd_____

1. Given: $\overline{AB} \cong \overline{CD}$
   $\overline{AB} \parallel \overline{CD}$
   $\overline{AE} \cong \overline{CF}$
   Prove: $\overline{BE} \cong \overline{DF}$



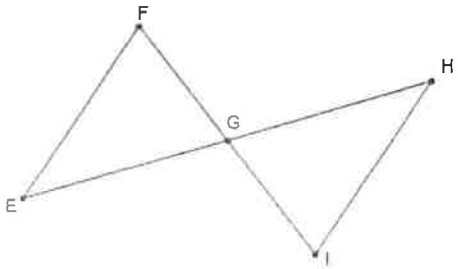
Statement	Reason
1.	
2.	
3.	
4.	

2. Given: $\angle DAL \cong \angle BCM$
   $\overline{DL} \cong \overline{MB}$
   $\angle ALD$ and $\angle CMB$ are right angles
   Prove: $\overline{AL} \cong \overline{CM}$



Statement	Reason
1.	
2.	
3.	
4.	

3. **Given:** $\overline{FI}$ bisects $\overline{EH}$
   $\angle E \cong \angle H$
   Prove: $\overline{EF} \cong \overline{HI}$



Statement	Reason
1.	
2.	
3.	
4.	
5.	

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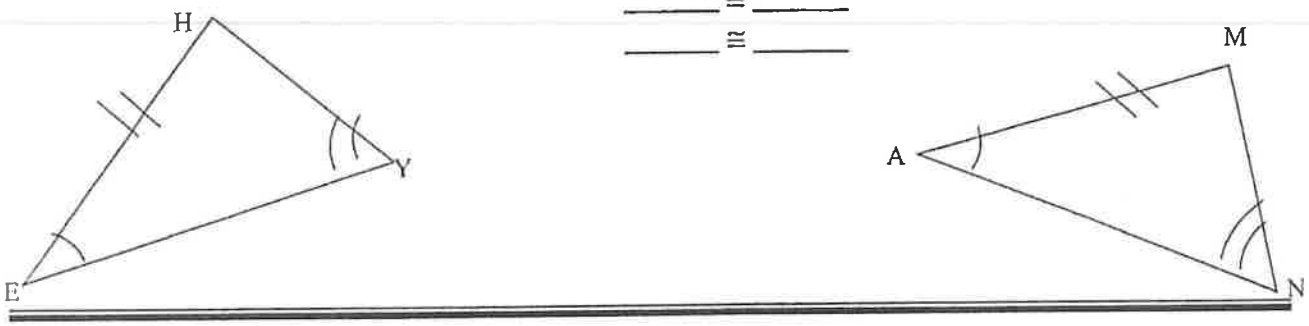
Math 2
Unit 6 – Triangles and Congruence
Test Review

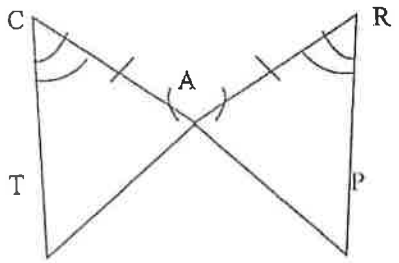
Name_____
Date_____ **Pd**____

1: ΔHEY is congruent to ΔMAN by _____.
What **other** parts of the triangles are congruent **by CPCTC**?

_____ ≅ _____
_____ ≅ _____
_____ ≅ _____



2:



ΔCAT ≅ _____, by _____

THEREFORE:
_____ ≅ _____, by CPCTC
_____ ≅ _____, by CPCTC
_____ ≅ _____, by CPCTC

➢ Solve each of the following sets of Congruent Triangles for the variables indicated.

3. $\Delta ABC \cong \Delta DEF$ $x =$ _____

$\angle A = (4x)^\circ$ $\angle E = (2x+1)^\circ$
$\angle C = 75^\circ$

4. $\Delta ABC \cong \Delta DEF$ $x =$ _____ $y =$ _____

$\angle A = 60^\circ$ $\overline{AB} = 6x - 4$
$\angle D = (5y)^\circ$ $\overline{DE} = 3x + 26$

5. $\Delta ABC \cong \Delta DEF$ $x =$ _____ $y =$ _____

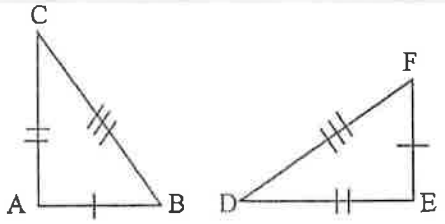
$\overline{AC} = 4x - 5$ $\overline{EF} = 5y$
$\overline{BC} = y + 1$ $\overline{DF} = 2x + 7$

Math 2
Unit 6 – Triangles and Congruence
Test Review

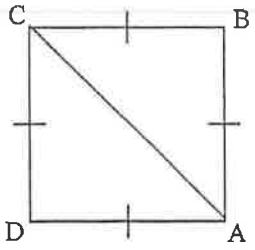
Name_____
Date_____ **Pd**___

- For each pair of triangles, name the reason for congruence. **(SSS, SAS, ASA, AAS, NONE)**
- Then name the correct congruent triangle. If the reason was NONE, leave the triangle answer blank.

1. $\Delta ABC \cong \Delta$_____ By:_____



2. $\Delta ABC \cong \Delta$_____ By:_____



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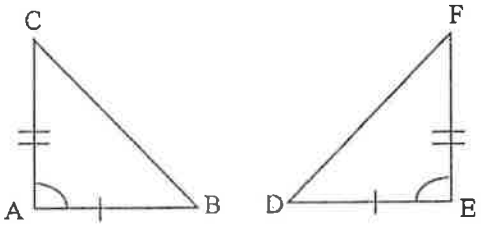
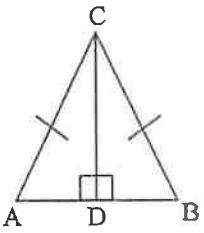
3. $\Delta ABC \cong \Delta$_____ By:_____



4. $\Delta ADC \cong \Delta$_____ By:_____



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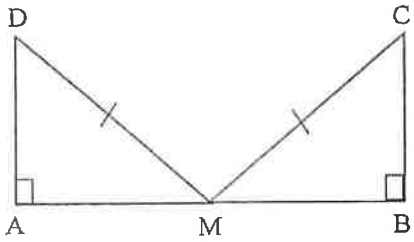
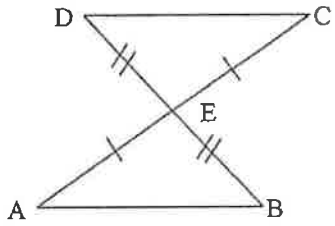
5. $\Delta MAD \cong \Delta$_____ By:_____



6. $\Delta ABE \cong \Delta$_____ By:_____



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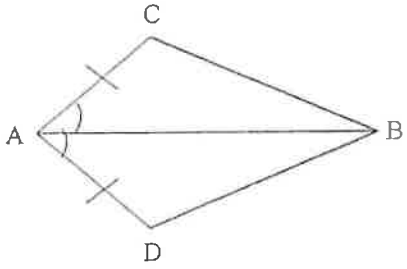
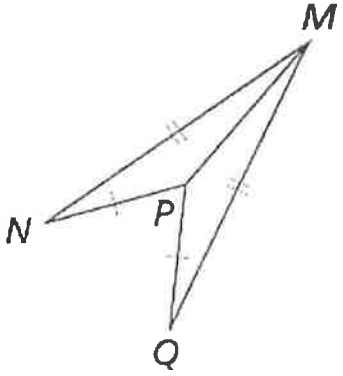
7. $\Delta ACB \cong \Delta$_____ By:_____



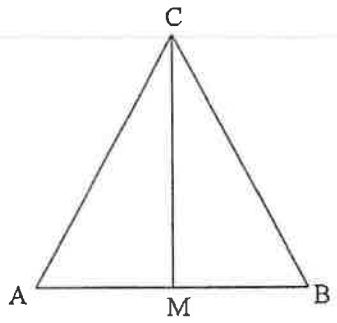
8. $\Delta MNP \cong \Delta$ _____ By:_____



Math 2
Unit 6 –Triangles & Congruence
TEST REVIEW

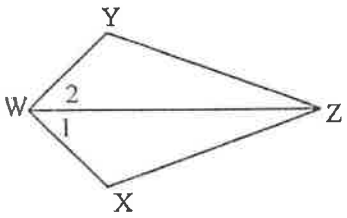
Name_____
Date_____ Pd_____

1. Given: $\overline{AC} \cong \overline{BC}$, M is the midpoint of $\overline{AB}$
   Prove: $\angle A \cong \angle B$



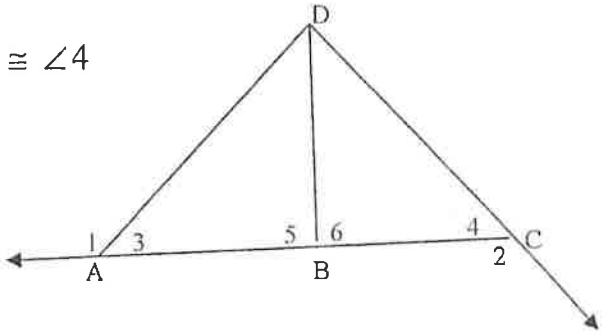
Statements	Reasons
$\overline{AC} \cong \overline{BC}$, M is the midpoint of $\overline{AB}$	GIVEN
$\angle A \cong \angle B$	CPCTC

2. Given: $\overline{WZ}$ bisects $\angle XWY$, $\angle X \cong \angle Y$
   Prove: $\overline{WY} \cong \overline{WX}$



Statements	Reasons
$\overline{WZ}$ bisects $\angle XWY$, $\angle X \cong \angle Y$	GIVEN
$\overline{WY} \cong \overline{WX}$	CPCTC

3. Given: $\overline{DB}$ is perpendicular to $\overline{AC}$, $\angle 3 \cong \angle 4$
   Prove: $\overline{AD} \cong \overline{CD}$



Statements	Reasons
$\overline{DB}$ is perpendicular to $\overline{AC}$, $\angle 3 \cong \angle 4$	GIVEN
$\overline{AD} \cong \overline{CD}$	CPCTC