

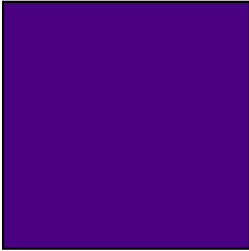
August 27, 2018

What does triangle congruency mean?

Find an explanation and a picture, using technology.

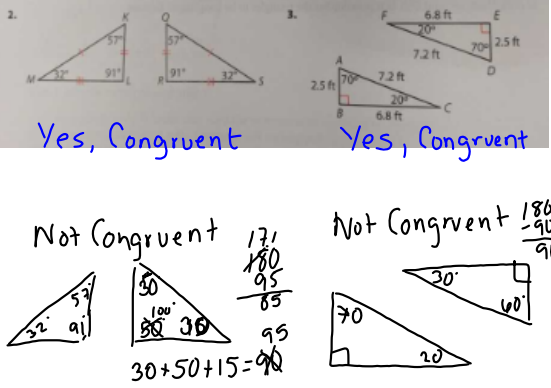
Aug 24-10:10 AM

Now the triangle sum theorem using paper.....



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For 2-5, determine whether the given triangles are congruent. Explain your reasoning.



Yes, Congruent

Yes, Congruent

Not Congruent

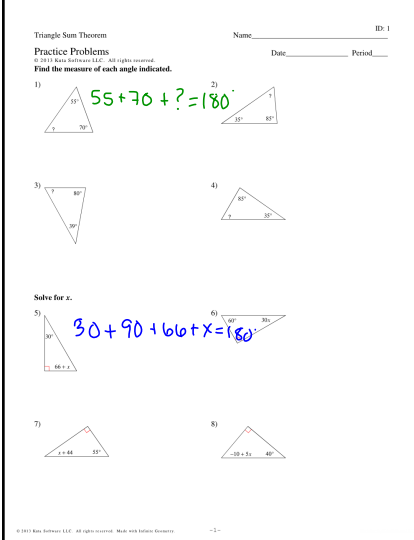
Not Congruent

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Triangle Sum Theorem

Practice Problems

Find the measure of each angle indicated.



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Choose 2 from #1-4

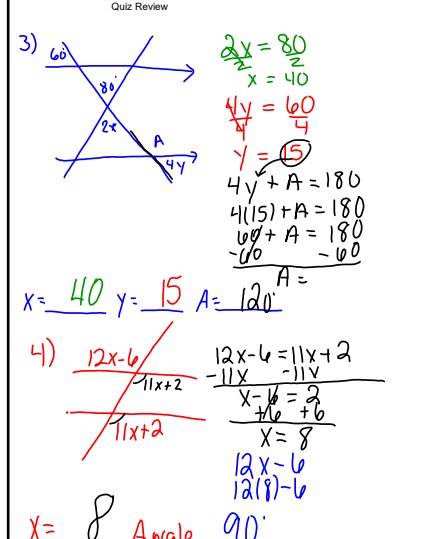
Choose 2 from #5-8

Choose 3 from #10-16

Circle these in red pen, please!

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Quiz Review

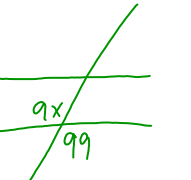


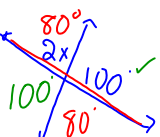
3)  $x = 40$ ,  $y = 15$ ,  $A = 120$

4)  $x = 8$ , Angle  $90$

Aug 28-12:18 PM


5)   $7x+2+108=180$   
 $7x+110=180$   
 $-110 \quad -110$   
 $7x=70$   
 $x=10$

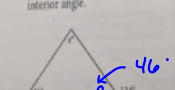
6)   $\frac{9x=99}{9}$   
 $x=11$

Bonus:   $2x+100=180$   
 $-100 \quad -100$   
 $2x=80$   
 $x=40$

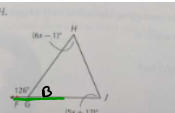
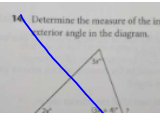
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p278-279 #11-15

11. Find w to find the measure of the exterior angle.   $68+68+a=180$   
 $136+a=180$   
 $-136 \quad -136$   
 $a=44$   
 $a+w=180$   
 $44+w=180$   
 $-44 \quad -44$   
 $w=136$

12. Find x to find the measure of the remote interior angle.   $C+134=180$   
 $-134 \quad -134$   
 $C=46$   
 $x+46+46=180$   
 $x+92=180$   
 $-92 \quad -92$   
 $x=88$

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b. Find m∠H.  Determine the measure of the indicated exterior angle in the diagram. 

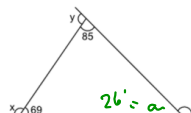
Match each angle with its corresponding measure, given  $m\angle 1 = 130^\circ$  and  $m\angle 7 = 70^\circ$ .

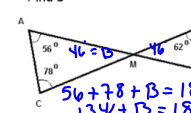
A. $m\angle 2$	a. $50^\circ$
B. $m\angle 3$	b. $60^\circ$
C. $m\angle 4$	c. $70^\circ$
D. $m\angle 5$	d. $110^\circ$
E. $m\angle 6$	e. $120^\circ$

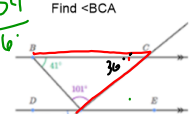
$6x-1+5x+17+b=180$   $12b+b=180$   $130+70+50=180$   
 $11x+70=180$   $-176 \quad -176$   $130+70=200$   
 $-70 \quad -70$   $2a=50$   
 $\frac{11x=110}{11}$   $a=25$   
 $x=10$   
 $\angle H = 6x-1$   
 $\angle H = 59$

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August 29, 2018



























Find z.   $69+85+a=180$   
 $154+a=180$   
 $-154 \quad -154$   
 $a=26$   
 $a+z=180$   
 $26+z=180$   
 $-26 \quad -26$   
 $z=154$

Find b.   $56+78+B=180$   
 $134+B=180$   
 $-134 \quad -134$   
 $B=46$   
 $46+b+2+B=180$   
 $108+B=180$   
 $-108 \quad -108$   
 $B=72$

Find  $\angle BCA$ .   $41+101+C=180$   
 $142+C=180$   
 $-142 \quad -142$   
 $C=38$

Aug 28-1:42 PM


Triangle Congruency Manipulative

	Side	Angle	Side	Angle	Hypotenuse
are congruent if...	Side	Angle	Angle	Side	enuse
SSS	Side	Side	Side	Angle	Leg
SAS	SSS	AAS	SAS	ASA	HL
SSS					
SAS					
AAS					
ASA					
HL can be used					

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Unit 2 - Similarity Congruence & Proofs

Isosceles triangle - label all parts



Isosceles vocabulary, please define.

Isosceles triangle -

Leg -

Vertex angle -

Base -

Base angle -

Aug 24-10:54 AM

Geometry Name \_\_\_\_\_ ID: 1  
 © 2014 Holt Rinehart and Winston, LLC. All rights reserved. What congruency statement is used (if any)? Date \_\_\_\_\_ Period \_\_\_\_\_  
 Determine if the two triangles are congruent. If they are, state how you know.

1) SAS

2) AAS ← Reflexive property

3) AAS

4) Not congruent

5) SSS

6) Not congruent

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7) SSS

8) Not congruent

9) Not congruent

10) HL

11) SSS

12) HL

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13-18 then let me see!

13) SAS

14) AAS

15) SAS

16) ASA

17) NOT CONGRUENT

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18) ASA

State what additional information is required in order to know that the triangles are congruent for the reason given.

19) HL HL

20) SAS SAS

21) HL HL

22) SSS SSS

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August 30, 2018

Determine if the two triangles are congruent. If they are, state how you know.

1) AAS

2) SAS

3) HL

4) HL

5) NOT CONGRUENT

6) SAS

7) NOT CONGRUENT

8) SAS

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For these fill in any missing statements or reasons.

1. Given:  $AB \cong DE$ ,  $\angle B \cong \angle E$ , and  $\angle A \cong \angle D$

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

Statements	Reasons
1. $AB \cong DE$	1. Given
2. $\angle B \cong \angle E$	2. Given
3. $\angle A \cong \angle D$	3. Given
4. $\triangle ABC \cong \triangle DEF$	4. ASA

2. Given:  $PQ \cong RS$ , and  $\angle PQS \cong \angle RSQ$

Prove:  $\triangle PQS \cong \triangle RSQ$

Statements	Reasons
1. $PQ \cong RS$	1. Given
2. $\angle PQS \cong \angle RSQ$	2. Given
3. $QS \cong QS$	3. Reflexive Property
4. $\triangle PQS \cong \triangle RSQ$	4. SAS

3. Given:  $AB \cong DE$ ,  $AC \cong DF$ , and  $BC \cong EF$

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

Statements	Reasons
1. $AB \cong DE$	1. Given
2. $AC \cong DF$	2. Given
3. $BC \cong EF$	3. Given
4. $\triangle ABC \cong \triangle DEF$	4. SSS

4. Given:  $\angle L \cong \angle N$ ,  $\angle LOM \cong \angle NMO$

Prove:  $\triangle LMO \cong \triangle NMO$

Statements	Reasons
1. $\angle L \cong \angle N$	1. Given
2. $\angle LOM \cong \angle NMO$	2. Given
3. $MO \cong MO$	3. Reflexive Property
4. $\triangle LMO \cong \triangle NMO$	4. AAS

5. \_\_\_\_\_

6. \_\_\_\_\_

Aug 30-8:04 AM

**SK CL**  
Given:  $\overline{AE}$  bisects  $\overline{BD}$ ,  $\angle A \cong \angle E$

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

Statements	Reasons
1. $\angle A \cong \angle E$	1. Given
2. $\overline{AC} \cong \overline{EC}$	2. Definition of Bisect
3. $\angle ACB \cong \angle ECD$	3. Vertical Angles
4. $\triangle ABC \cong \triangle EDC$	4. ASA

**PR**  
Given:  $\overline{PQ} \parallel \overline{ST}$ ,  $\overline{PR} \cong \overline{TR}$

Prove:  $\triangle PQR \cong \triangle TSR$

Statements	Reasons
1. $\overline{PR} \cong \overline{TR}$	1. Given
2. $\angle RPQ \cong \angle RTS$	2. Alternate Interior Angles
3. $\angle PRQ \cong \angle TRS$	3. Vertical Angles
4. $\triangle PQR \cong \triangle TSR$	4. SAS

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**AO AM**

9. Given:  $\overline{PQ} \cong \overline{SU}$ ,  $\overline{QR} \cong \overline{ST}$ , and  $\overline{PR} \cong \overline{TU}$

Prove:  $\triangle PQR \cong \triangle STU$

Statements	Reasons
1. $\overline{PQ} \cong \overline{SU}$	1. Given
2. $\overline{QR} \cong \overline{ST}$	2. Given
3. $\overline{PR} \cong \overline{TU}$	3. Given
4. $\triangle PQR \cong \triangle STU$	4. SSS

10. Given: N is the midpoint of  $\overline{MO}$ ,  $\overline{LM} \cong \overline{OP}$ , and  $\overline{LN} \cong \overline{PN}$

Prove:  $\triangle LMN \cong \triangle PON$

Statements	Reasons
1. $\overline{LN} \cong \overline{PN}$	1. Given
2. $\overline{LN} \cong \overline{PN}$	2. Given
3. N is the Midpoint of $\overline{MO}$	3. Given
4. $\overline{MN} \cong \overline{ON}$	4. Definition of Bisect
5. $\triangle LMN \cong \triangle PON$	5. SAS

11. Given: C is the midpoint of  $\overline{BE}$ ,  $\angle B \cong \angle E$ , and  $\overline{AB} \cong \overline{DE}$

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

Statements	Reasons
1. $\angle B \cong \angle E$	1. Given
2. $\overline{AB} \cong \overline{DE}$	2. Given
3. $\overline{BC} \cong \overline{EC}$	3. Midpoint
4.	4. Midpoint
5. $\triangle ABC \cong \triangle DEC$	5. SAS

12. Given:  $\overline{QT}$  bisects  $\overline{SP}$ ,  $\overline{SQ} \cong \overline{PT}$

Prove:  $\triangle QRP \cong \triangle SRT$

Statements	Reasons
1. $\overline{QT}$ bisects $\overline{SP}$	1. Given
2. $\overline{SQ} \cong \overline{PT}$	2. Given
3. $\overline{QT} \cong \overline{QT}$	3. Definition of Bisect
4. $\angle QRP \cong \angle SRT$	4. Definition of Bisect
5. $\triangle QRP \cong \triangle SRT$	5. SAS

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STUDY GUIDE

Geometry Name \_\_\_\_\_  
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Triangle Congruence

State if the two triangles are congruent. If they are, state how you know.

1) ASA

2) SSS

3) NOT CONGRUENT

4) NOT CONGRUENT

5) AAS

6) HL

7) ASA

8) AAS

Aug 30-8:06 AM

9) HL

10) SSS

Write the congruence Statement

$\triangle CDE \cong \triangle CAB$

Write the congruence Statement

$\triangle LMC \cong \triangle PEC$   
 $\triangle MCL \cong \triangle EPC$

Aug 30-8:06 AM

Geometry, Unit 5 - Congruent Triangles Proof Activity - Part I Name \_\_\_\_\_

For each problem, do the following:

- Show the given information in the diagram (using tick marks to show congruent sides and arcs to show congruent angles)
- Show any other congruent parts you notice (from vertical angles, sides shared in common, or alternate interior angles with parallel lines)
- Give the postulate or theorem that proves the triangles congruent (SSS, SAS, ASA, AAS, HL)
- Finally, fill in the blanks to complete the proof.

1. Given:  $\overline{BC} \cong \overline{DC}$ ;  $\overline{AC} \cong \overline{EC}$   
 Prove:  $\triangle BCA \cong \triangle DCE$

Statements	Reasons
1. $\overline{BC} \cong \overline{DC}$ , $\overline{AC} \cong \overline{EC}$	1. Given
2. $\angle BCD \cong \angle DCE$	2. Vertical Angles Theorem
3. $\triangle BCA \cong \triangle DCE$	3. SAS

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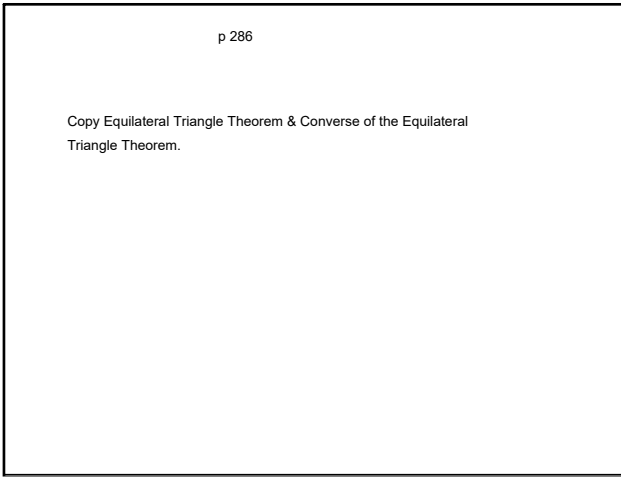
2. Given:  $\overline{JK} \cong \overline{LM}$ ;  $\overline{JM} \cong \overline{LH}$   
 Prove:  $\triangle KJM \cong \triangle LHM$

Statements	Reasons
1.	1.
2.	2. Reflexive Prop.
3.	3.

3. Given:  $\angle G \cong \angle I$ ;  $\overline{FH}$  bisects  $\angle GFI$   
 Prove:  $\triangle GFH \cong \triangle IFH$

Statements	Reasons
1. $\angle G \cong \angle I$ ; $\overline{FH}$ bisects $\angle GFI$	1.
2. $\angle GFH \cong \angle IFH$	2. Def. of
3.	3. Reflexive Prop.
4.	4.

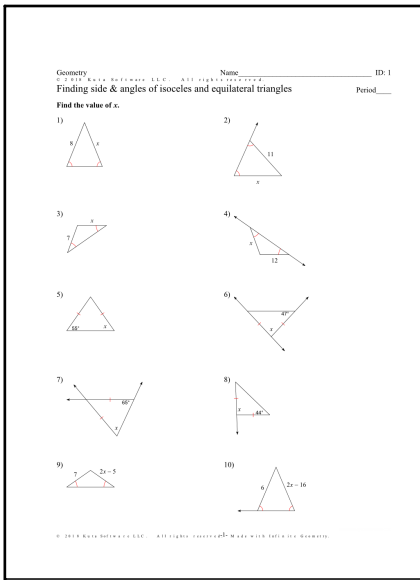
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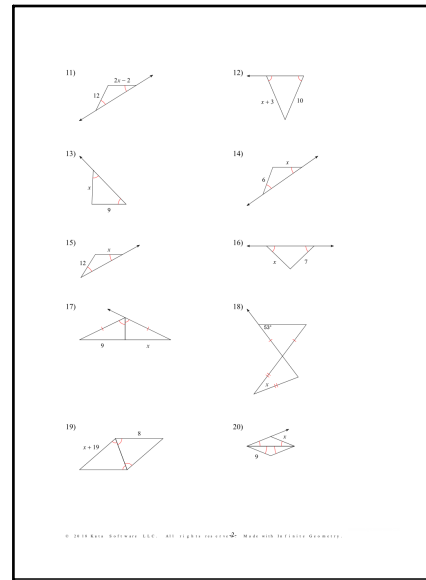
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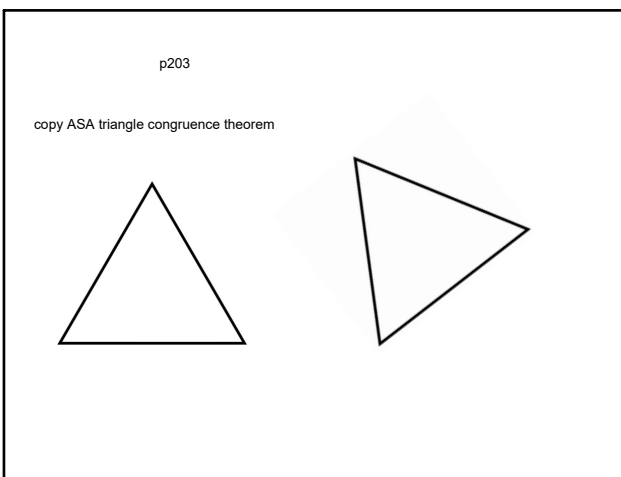
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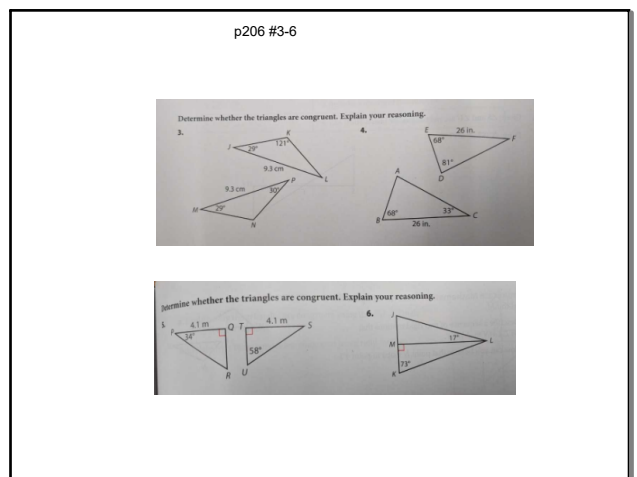
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Aug 24-11:10 AM



Aug 24-11:11 AM



Aug 24-11:40 AM

p213 copy the SAS triangle congruence theorem

Aug 24-12:26 PM

p216 #2-7

Determine whether the triangles are congruent. Explain your reasoning.

Find the value of the variable that results in congruent triangles. Explain.

Aug 24-12:27 PM

p222

copy SSS triangle congruence

Aug 24-12:06 PM

p227 #4-11

Identify a sequence of rigid motions that maps one side of  $\triangle ABC$  onto one side of  $\triangle DEF$ .

In each figure, identify the perpendicular bisector and the line segment it bisects, and explain how to use the information to show that the two triangles are congruent.

Prove that the triangles are congruent or explain why this is not possible.

Aug 24-12:07 PM

p246 copy the AAS congruence statement

Aug 24-12:10 PM

p 250 #1-6

For 1-6, decide whether you have enough information to determine that the triangles are congruent. If they are congruent, explain why.


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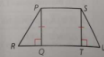
p256 copy HL congruence theorem


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
p258 2-5, 10-13

Determine whether enough information is given to prove that the triangles are congruent. Explain your answer.

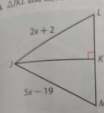
2.  $\triangle ABC$  and  $\triangle DCB$  

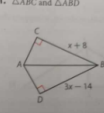
3.  $\triangle PQR$  and  $\triangle STU$  

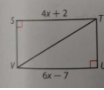
4.  $\triangle GKI$  and  $\triangle HIG$  

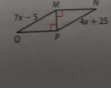
5.  $\triangle EFG$  and  $\triangle SQR$  

**Algebra** What value of  $x$  will make the given triangles congruent? Explain.

10.  $\triangle JKI$  and  $\triangle JKM$  

11.  $\triangle ABC$  and  $\triangle ABD$  

12.  $\triangle STV$  and  $\triangle UVT$  

13.  $\triangle MPQ$  and  $\triangle PMN$  

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Study Guide

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Test

Aug 24-12:20 PM

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