

August 27, 2018

What does triangle congruency mean?

Find an explanation and a picture, using technology.

Aug 24-10:10 AM

Let's look at the triangle sum theorem...


Geogebra, interior triangle sum

Geogebra, triangle sum theorem

What is the triangle sum theorem?

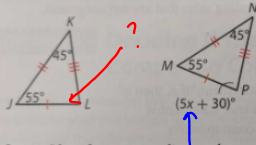
Aug 24-10:43 AM

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



Aug 24-10:44 AM

Example 2 Find the value of the variable that results in congruent triangles.



Congruent
 $\angle K \approx \angle N \approx 45^\circ$
 $\angle J \approx \angle M = 55^\circ$
 $\angle L \approx \angle P$

Step 1 Identify corresponding angles.

$\angle M$ corresponds to $\angle J$, because they have the same measure and they are formed by congruent corresponding sides. Similarly, $\angle N$ corresponds to $\angle K$. So, $\angle P$ corresponds to $\angle L$.

$$55 + 45 + \angle L = 180$$

$$100 + \angle L = 180$$

$$-100 \quad -100$$

$$\angle L = 80^\circ$$

$$80 = 5x + 30$$

$$-30 \quad -30$$

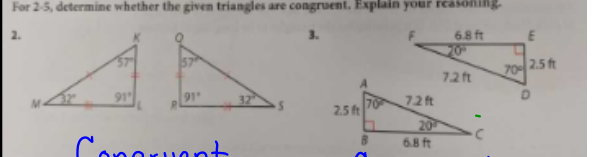
$$50 = 5x$$

$$\frac{50}{5} = \frac{5x}{5}$$

$$10 = x$$

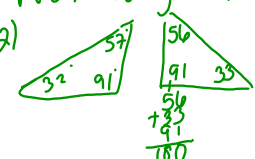
Aug 24-10:45 AM

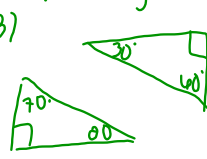
For 2-5, determine whether the given triangles are congruent. Explain your reasoning.



Congruent look @ sides →
 look @ angles →

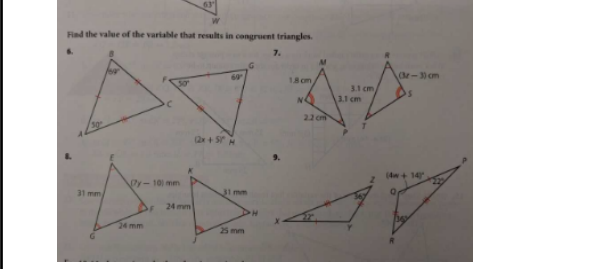
Not Congruent Not Congruent

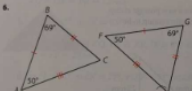
2)  $\frac{56}{91} = \frac{32}{56}$

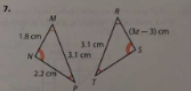
3) 

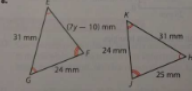
Aug 24-10:48 AM

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



6. 

7. 

8. 

Aug 24-10:48 AM

Triangle Sum Theorem
Practice Problems
Find the measure of each angle indicated.

1) $? + 55 + 70 = 180$

2) $? + 35 + 85 = 180$

3) $? + 30 + 90 = 180$

4) $? + 45 + 35 = 180$

Solve for x.

5) $66 + x + 30 + 90 = 180$

6) $60 + 30x + 90 = 180$

7) $x + 44 + 55 = 180$

8) $18 + 2x + 40 = 180$

Aug 24-10:50 AM

Find the measure of angle A

9) $\angle A = 20(1) = 20$
 $71x - 1 + 20x + 90 = 180$
 $91x + 89 = 180$
 $91x = 91$
 $x = 1$

11) $x + 52 + 67 + x + 75 = 180$
 $2x + 194 = 180$
 $-194 - 194$
 $2x = -14$
 $x = -7$

12) $x + 52 + 67 + x + 75 = 180$
 $2x + 194 = 180$
 $-194 - 194$
 $2x = -14$
 $x = -7$

13) $x + 52 + 67 + x + 75 = 180$
 $2x + 194 = 180$
 $-194 - 194$
 $2x = -14$
 $x = -7$

14) $x + 52 + 67 + x + 75 = 180$
 $2x + 194 = 180$
 $-194 - 194$
 $2x = -14$
 $x = -7$

15) $x + 52 + 67 + x + 75 = 180$
 $2x + 194 = 180$
 $-194 - 194$
 $2x = -14$
 $x = -7$

16) $x + 52 + 67 + x + 75 = 180$
 $2x + 194 = 180$
 $-194 - 194$
 $2x = -14$
 $x = -7$

Aug 24-10:50 AM

Choose 2 from #1-4
Choose 2 from #5-8
Choose 3 from #10-16

Circle these in red pen, please!

Aug 27-11:32 AM

August 28, 2018

What is the interior triangle sum theorem?
The 3 angle of any triangle = 180.

4) Solve for ?
7) Solve for x
14) Solve for A

4) $? + 85 + 35 = 180$
 $? + 120 = 180$
 $-120 - 120$
 $? = 60$

7) $x + 44 + 55 + 90 = 180$
 $x + 189 = 180$
 $-189 - 189$
 $x = -9$

14) $5x + 2 + 6x + 134 = 180$
 $11x + 136 = 180$
 $-136 - 136$
 $11x = 44$
 $\frac{11x}{11} = \frac{44}{11}$
 $x = 4$
 $A = 5(4) + 2$
 $A = 22$

Aug 28-7:51 AM

Quiz review

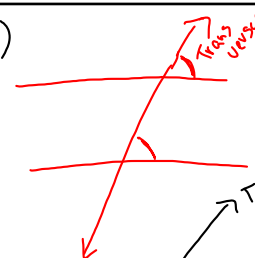

12) $m\angle 1 = 60$, $m\angle 2 = 2x$ Linear Pair
 $\angle 1 + \angle 2 = 180$
 $x + 2x = 180$
 $3x = 180$
 $\frac{3x}{3} = \frac{180}{3}$
 $x = 60$
 $2x = 2 \cdot 60$
 $m\angle 1 = 60$, $m\angle 2 = 120$

Bonus Solve for all angles.
 $80 + 2x = 180$
 $-100 - 100$
 $2x = 80$
 $\frac{2x}{2} = \frac{80}{2}$
 $x = 40$

Aug 28-10:42 AM

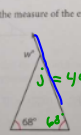
3) $2x = 80$
 $\frac{2x}{2} = \frac{80}{2}$
 $x = 40$
 $4y = 60$
 $\frac{4y}{4} = \frac{60}{4}$
 $y = 15$
 $4y + A = 180$
 $4(15) + A = 180$
 $-60 - 60$
 $A = 120$
 $x = 40$, $y = 15$, $A = 120$

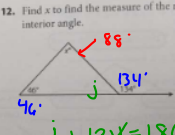
Aug 28-10:50 AM

2)  Corresponding \angle s.
 1)  alternate interior
 7 complementary $\angle = 90^\circ$
 8 supplementary or linear pair $\angle = 180^\circ$
 9 vertical angles

Aug 28-10:52 AM

p278-279 #11-15

11. Find w to find the measure of the exterior angle.  $j = 44$

12. Find x to find the measure of the remote interior angle.  88°

$$68 + 68 + j = 180$$

$$136 + j = 180$$

$$\underline{-136} \quad \underline{-136}$$

$$j = 44$$

j & w are a linear pair

$$44 + w = 180$$

$$\underline{-44} \quad \underline{-44}$$

$$w = 136$$

$$j + 134 = 180$$

$$\underline{-134} \quad \underline{-134}$$

$$j = 46$$

$$46 + 46 + x = 180$$

$$92 + x = 180$$

$$\underline{-92} \quad \underline{-92}$$

$$x = 88$$

Aug 24-10:54 AM

Find $m\angle H$.

$$6x - 1 + 5x + 17 + L = 180$$

$$6x - 1 + 5x + 17 + 54 = 180 \quad L = 54$$

$$11x + 30 = 180$$

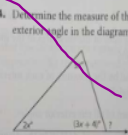
$$\underline{-30} \quad \underline{-30}$$

$$11x = 150$$

$$\frac{11x}{11} = \frac{150}{11}$$

$$x = 13.6$$

$\angle H = 6x - 1$
 $\angle H = 6(13.6) - 1$
 $\angle H = 81.6$

14. Determine the measure of the indicated exterior angle in the diagram.  $L = 56$

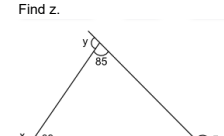
Match each angle with its corresponding measure, given $m\angle 1 = 130^\circ$ and $m\angle 7 = 70^\circ$.

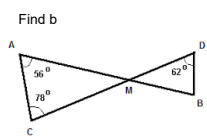
a. $\angle A$	50°
b. $\angle B$	60°
c. $\angle C$	70°
d. $\angle D$	110°
e. $\angle E$	120°

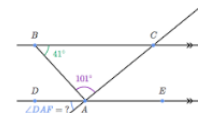
70°
 60°
 130°

Aug 28-11:06 AM

August 29, 2018

Find z . 


Find b . 

Find $\angle BCA$. 

Aug 28-11:39 AM

Unit 2 - Similarity Congruence & Proofs Name _____

Isosceles triangle - label all parts



Isosceles vocabulary, please define.

Isosceles triangle:

Leg -

Vertex angle -

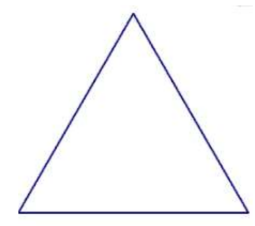
Base -

Base angle -

Aug 24-10:54 AM

Unit 2 - Similarity Congruence & Proofs Name _____

Equilateral Triangle



Find a minimum of three facts about equilateral triangles.

1)

2)

3)

Aug 24-10:54 AM



p 286



Copy Equilateral Triangle Theorem & Converse of the Equilateral Triangle Theorem.

Aug 24-10:57 AM



p289 #4-9

Find the measure of the indicated angle.

4. $m\angle A$  5. $m\angle R$ 

6. $m\angle O$  7. $m\angle F$ 

For 8-11, find the length of the indicated side.



8. \overline{DE}  9. \overline{KL} 



Aug 24-10:58 AM



Geometry Name: _____ ID: 1



Finding side & angles of isosceles and equilateral triangles Period: _____



Find the value of x .

1)  2) 



3)  4) 



5)  6) 



7)  8) 



9)  10) 



Aug 24-11:10 AM

11)  12) 

13)  14) 

15)  16) 

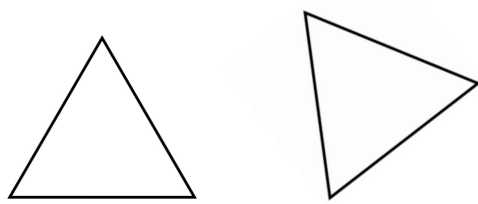
17)  18) 

19)  20) 

Aug 24-11:10 AM

p203

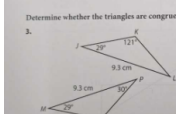
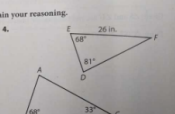
copy ASA triangle congruence theorem

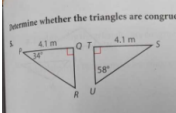
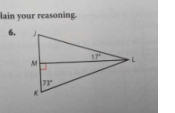


Aug 24-11:11 AM

p206 #3-6

Determine whether the triangles are congruent. Explain your reasoning.

3.  4. 

5.  6. 

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.

Aug 24-12:12 PM

p256 copy HL congruence theorem

Aug 24-12:14 PM

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 $\triangle SQR$

10. $\triangle JKI$ and $\triangle LKM$

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

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

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

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

Aug 24-12:14 PM

Geometry Name: _____ ID: 1

What congruency statement is used (if any)? Date: _____ Period: _____

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

1)

2)

3)

4)

5)

6)

Aug 24-12:19 PM

7)

8)

9)

10)

11)

12)

Aug 24-12:19 PM

13)

14)

15)

16)

17)

Aug 24-12:19 PM

18)

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

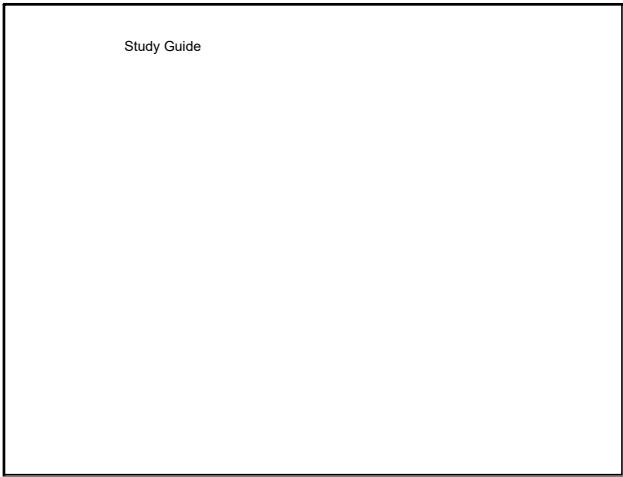
19) HL.

20) SAS.

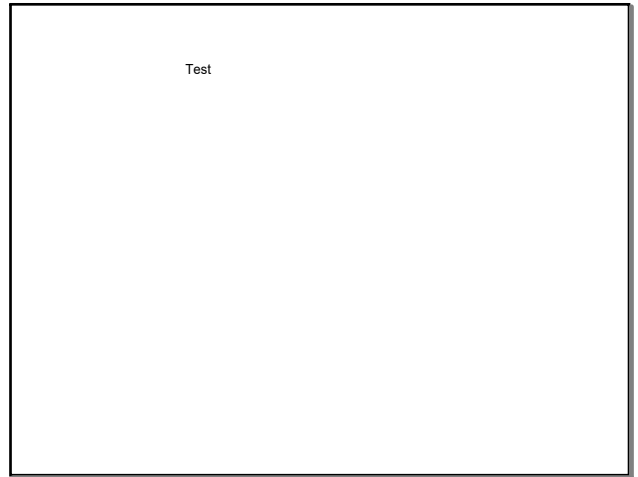
21) HL.

22) SSS.

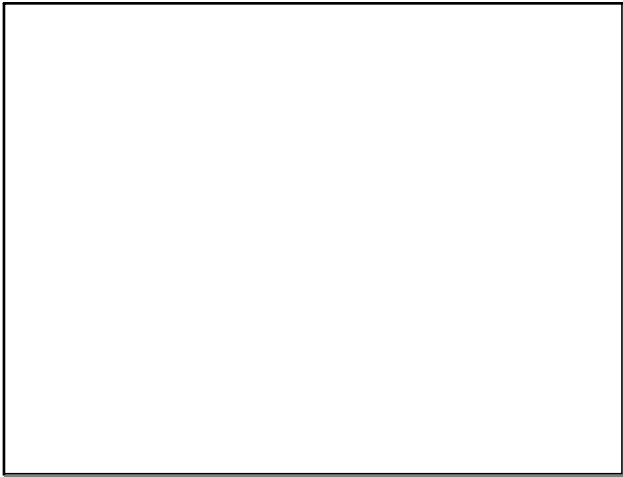
Aug 24-12:20 PM



Aug 24-12:20 PM



Aug 24-12:20 PM



Aug 24-12:25 PM