

## Tuesday 3/3/20

We have a lot to do today, please focus and ask questions!!!

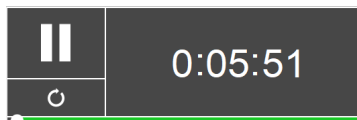
1. Grab Notes

2. Put your phones/earbuds away

3. Warm-Up: Do #6-10 in EOC Review

4. Triangle Congruenc Proofs, CPCTC

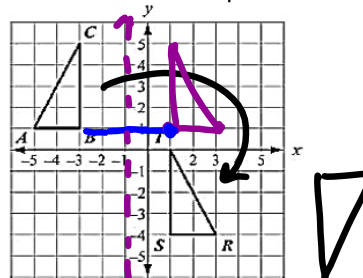
5. QUIZ TOMORROW!!!



Feb 14-3:47 PM

### Warm-Up:

6) Which sequence of transformations maps  $\triangle ABC$  to  $\triangle RST$ ?



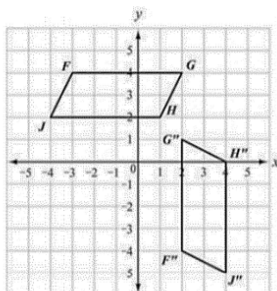
A. Reflect  $\triangle ABC$  across the line  $x = -1$ . Then translate the result 1 unit down.

B. Reflect  $\triangle ABC$  across the line  $x = -1$ . Then translate the result 5 units down.

C. Translate  $\triangle ABC$  6 units to the right. Then rotate the result  $90^\circ$  clockwise about the point  $(1, 1)$ .

D. Translate  $\triangle ABC$  6 units to the right. Then rotate the result  $90^\circ$  counterclockwise about the point  $(1, 1)$ .

7) Parallelogram FGHIJ was translated 3 units down to form parallelogram F'G'H'I'J'. Parallelogram F'G'H'I'J' was then rotated 90° counterclockwise about point G' to obtain parallelogram F''G''H''I''J''.



Which statement is true about parallelogram FGHIJ and parallelogram F''G''H''I''J''?

- A. The figures are both similar and congruent.
- B. The figures are neither similar nor congruent.
- C. The figures are similar but not congruent.
- D. The figures are congruent but not similar.

8) **CONSTRUCTED RESPONSE**

Rectangle WXYZ has coordinates  $W(1, 2)$ ,  $X(3, 2)$ ,  $Y(3, -3)$ , and  $Z(1, -3)$ .

a. What would the coordinates be of W'X'Y'Z' after a rotation of 90° clockwise about the origin?

$(y; x) \rightarrow W'(2, -1) X'(2, -3) Y'(-3, -3) Z'(-3, -1)$

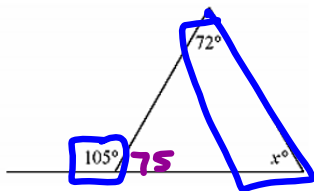
b. What would the coordinates be of W''X''Y''Z'' after a translation 2 units left and 3 units up?

$(x-2, y+3) W''(0, 2) X''(0, 0) Y''(-5, 0) Z''(-5, 2)$

c. Is rectangle WXYZ congruent to rectangle W''X''Y''Z''? Explain.

Yes, both transf. were isometries.

9) What is the value of x?

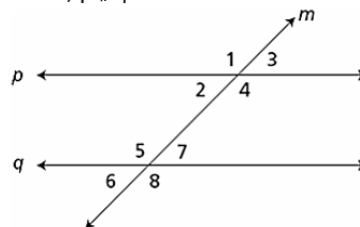


- A. 33
- B. 75
- C. 147
- D. 162

$x + 75 + 72 = 180$   
 $x = 33$

$x + 72 = 105$   
 $x = 33$

10) In the figure below,  $p \parallel q$ .



Which of these statements is NOT true?

- A.  $m\angle 1 = m\angle 4$
- B.  $m\angle 6 + m\angle 3 = 180^\circ$
- C.  $m\angle 2 = m\angle 5$
- D.  $m\angle 2 + m\angle 5 = 180^\circ$

# HW Answers on board

Feb 14-3:48 PM

**What am I learning today?**

**Learning Objective 2B.3**

How to prove two triangles are congruent.

Jul 31-6:18 PM

## What will I do to show that I have learned it?

I can... Prove two figures are congruent by congruent marks, given statements, and using SSS, SAS, ASA, AAS, or HL

Jul 31-6:18 PM

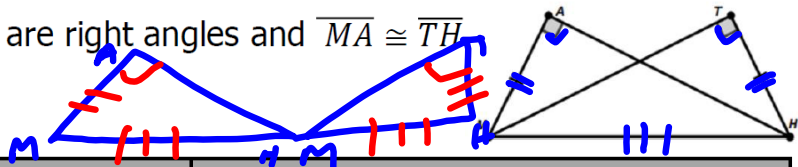
To prove two triangles are congruent, we use a 2-column proof.

1. BUILD after each GIVEN separately.
2. MARK the diagram (if it is not already) as you move through the proof
3. Remember, you are looking for 3 pieces of information to be able to prove the two triangles are congruent!

Aug 25-7:59 AM

**Given:**  $\angle MAH$  and  $\angle HTM$  are right angles and  $\overline{MA} \cong \overline{TH}$

**Prove:**  $\triangle MAH \cong \triangle HTM$

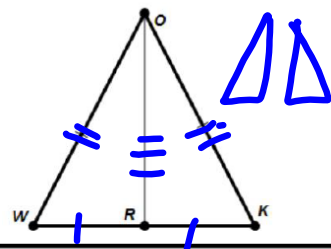


Statements	Reasons
1. $\angle MAH$ and $\angle HTM$ are right angles	1. Given
2. $\overline{MA} \cong \overline{TH}$	2. Given
3. $\angle MAH \cong \angle HTM$	3. All right $\angle$ 's are $\cong$
4. $\overline{MH} \cong \overline{MH}$	4. Reflexive Property
5. $\triangle MAH \cong \triangle HTM$	5. HL

Aug 25-8:01 AM

**Given:**  $\triangle WOK$  is an isosceles triangle and point  $R$  is the midpoint of  $\overline{WK}$

**Prove:**  $\triangle WRO \cong \triangle KRO$

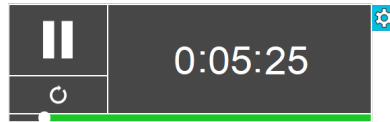


Statements	Reasons
1. $\triangle WOK$ is an isosceles $\triangle$	1. Given
2. $\overline{WO} \cong \overline{KO}$	2. Legs in an Isos. $\triangle$ are $\cong$
3. Point $R$ is midpoint of $\overline{WK}$	3. Given
4. $\overline{WR} \cong \overline{KR}$	4. Def. of midpoint
5. $\overline{OR} \cong \overline{OR}$	5. Reflexive Property
6. $\triangle WOR \cong \triangle KOR$	6. SSS

Feb 14-3:53 PM

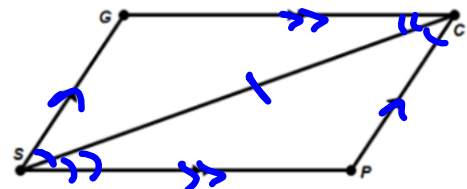
You try the next two proofs on your own!

\*\*\*Remember: Parallel lines, think  
Alternate Interior Angles\*\*\*



**Given:**  $\overline{GC} \parallel \overline{PS}$  and  $\overline{GS} \parallel \overline{CP}$

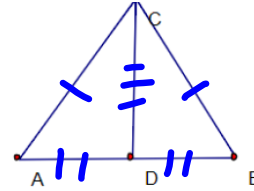
**Prove:**  $\triangle GCS \cong \triangle PCS$



Statements	Reasons
1. $\overline{GC} \parallel \overline{PS}$	1. Given
2. $\overline{GS} \parallel \overline{CP}$	2. Given
3. $\overline{CS} \cong \overline{CS}$	3. Reflexive Property
4. $\angle GSC \cong \angle PCS$	4. Alt. Int. Angles are $\cong$
5. $\angle SCG \cong \angle CSP$	5. Alt. int. angles are congruent
6. $\triangle GCS \cong \triangle PCS$	6. ASA

**Given:**  $\overline{AC} \cong \overline{CB}$  ;  $\overline{CD}$  bisects  $\overline{AB}$

**Prove:**  $\triangle ADC \cong \triangle BDC$



Statements	Reasons
1. $\overline{AC} \cong \overline{CB}$	1. Given
2. $\overline{CD}$ bisects $\overline{AB}$	2. Given
3. $\overline{AD} \cong \overline{BD}$	3. Def. of bisector
4. $\overline{CD} \cong \overline{CD}$	4. Reflexive prop.
5. $\triangle ADC \cong \triangle BDC$	5. SSS

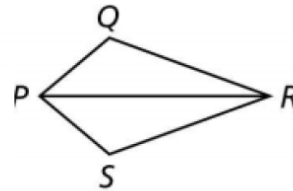
Feb 14-3:53 PM

With your elbow partner, complete the remaining 3 proofs from your notes...be prepared to present.



**Given:**  $\overline{PR}$  bisects  $\angle QPS$  and  $\angle QRS$

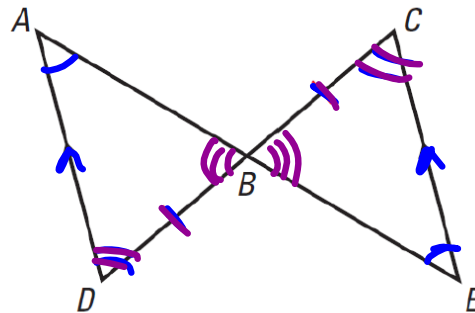
**Prove:**  $\triangle PSR \cong \triangle PQR$



Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Feb 14-3:53 PM

**Prove:**  $\triangle DAB \cong \triangle CEB$



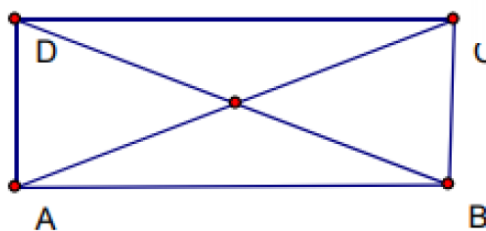
Statements	Reasons
1. $\overline{DB} \cong \overline{CB}$	1. Given
2. $\overline{AD} \parallel \overline{CE}$	2. Given
3. $\angle DAE \cong \angle CEA$	3. Alt. Int. $\angle$ 's are $\cong$
4. $\angle ADC \cong \angle ECD$	4. Alt. Int. $\angle$ 's are $\cong$
5. $\triangle DAB \cong \triangle CEB$	5. AAS

Feb 14-3:54 PM



**Given:**  $\overline{DA} \cong \overline{CB}$  ;  $\overline{DA} \perp \overline{AB}$  ;  $\overline{CB} \perp \overline{AB}$

**Prove:**  $\triangle DAB \cong \triangle CBA$



Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.

Feb 14-3:54 PM

## What am I learning today?

### Learning Objective 2B.4

### How to use CPCTC.

Jul 31-6:18 PM

## What will I do to show that I have learned it?

I can... Prove two triangles are congruent to then be able to prove their corresponding parts are congruent.

Jul 31-6:18 PM

Corresponding **P**arts of Congruent Triangles are **C**ongruent (**CPCTC**)

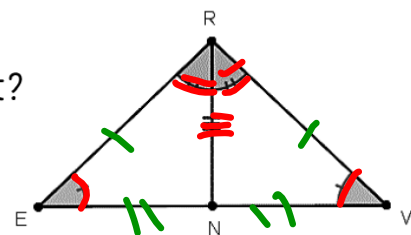
**CPCTC** is a **reason** used in a proof \*\*\*\* **AFTER** \*\*\*\*  
two triangles have been proven **CONGRUENT!!**

$\triangle ERN \cong \triangle VRN$  by **AAS**

What **other** parts of the triangles are congruent?

$ER \cong VR$   $EN \cong VN$   
 $\angle ENR \cong \angle VNR$

By CPCTC



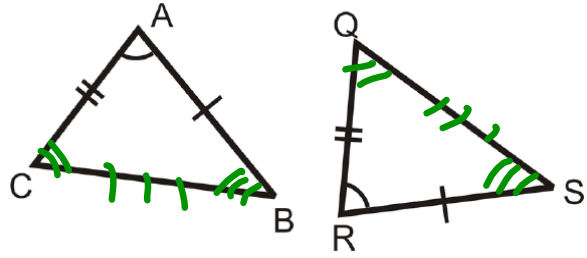
Aug 28-8:00 AM

$\triangle CAB \cong \triangle QRS$  by SAS

Therefore:  $\overline{CB} \cong \overline{RS}$  by CPCTC

$\angle C \cong \angle R$  by CPCTC

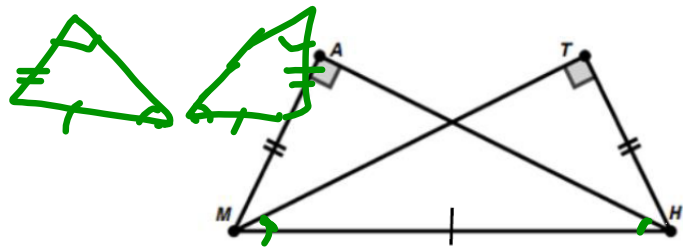
$\angle B \cong \angle S$  by CPCTC



Aug 28-8:03 AM

Given:  $\triangle MAH \cong \triangle HTM$  by HL

Prove:  $\angle TMH \cong \angle AHM$

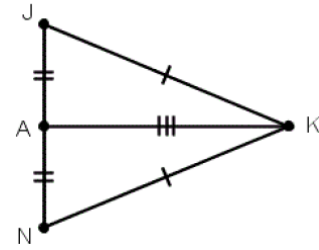


Statements	Reasons
1. $\triangle MAH \cong \triangle HTM$ by HL	1. Given
2. $\angle TMH \cong \angle AHM$	2. CPCTC

Aug 28-8:04 AM

**Given:**  $\triangle JAK \cong \triangle NAK$  by SSS

**Prove:**  $\angle JKA \cong \angle NKA$

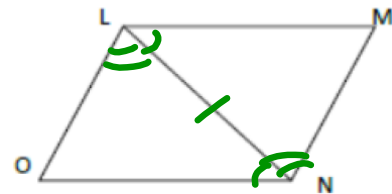


Statements	Reasons
1.	1.
2.	2.

Aug 28-8:05 AM

**Given:**  $\angle NLM \cong \angle LNO$  and  $\angle OLN \cong \angle MNL$

**Prove:**  $\angle M \cong \angle O$



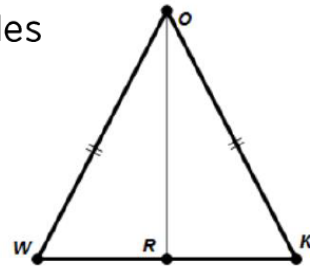
Statements	Reasons
1. $\angle NLM \cong \angle LNO$	1. Given
2. $\angle OLN \cong \angle MNL$	2. Given
3. $\overline{LN} \cong \overline{LN}$	3. Reflexive Prop.
4. $\triangle OLN \cong \triangle MNL$	4. ASA
5. $\angle M \cong \angle O$	5. CPCTC

~

Aug 28-8:05 AM

**Given:**  $\overline{WO} \cong \overline{KO}$ ;  $\angle WRO$  and  $\angle KRO$  are right angles

**Prove:**  $\overline{WR} \cong \overline{KR}$



Statements	Reasons
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.

Aug 28-8:05 AM

**Classwork:**



Complete the classwork about proving congruent triangles.

**HW:** Finish the classwork.

Jul 31-9:12 PM