Questions on 5.3 HW?

THURSDAY, JANUARY 26th, TALENTS AND TRADITIONS ASSEMBLY SCHEDULE:

SPLIT ASSEMBLY - LONG			
FIRST LUNCH		SECOND LUNCH	
PERIOD	TIME	PERIOD	TIME
1/2	7:45 - 8:50 am	1/2	7:45 - 8:50 am
1st Assembly		8:55 - 10:15 am	
Classes attending the 1st assembly will take roll in class and then proceed to the auditorium.	3/4	10:20 - 11:40 am	
3rd Period for 2nd Assembly	3/4	8:55 - 10:15 am	
2nd Assembly		10:20 - 11:40 am	
LUNCH	11:40 - 12:10 pm	5/6	11:45 - 12:50 pm
5/6	12:15 - 1:20 pm	LUNCH	12:50 - 1:20 pm
7/8	1:25 - 2:30 pm	7/8	1:25 - 2:30 pm

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Remember that when you write a congruence statement such as $\Delta ABC \cong \Delta FGH$, the corresponding parts of the two triangles must be the parts that are congruent. For instance, $\angle A \cong \angle F, \overline{AB} \cong \overline{FG}, \angle B \cong \angle G, \overline{BC} \cong \overline{GH}$. *Also, recall that the congruence patterns for triangles, ASA. SAS, and SSS, are what we can use to justify triangle congruence.*

The segments and angles in each problem below are corresponding parts of 2 congruent triangles. Make a sketch of the two triangles. Then write a congruence statement for each pair of triangles represented. State the congruence pattern that justifies your statement.

	Congruence statement	Congruence pattern
1. $\overline{ML} \cong \overline{ZJ}, \overline{LR} \cong \overline{JB}, \angle L \cong \angle J$	a. $\triangle RLM \cong \triangle BJZ$	b. SAS
2. $\overline{WB} \cong \overline{QR}, \overline{BP} \cong \overline{RS}, \overline{WP} \cong \overline{QS}$	a.	b.
3. $\overline{CY} \cong \overline{RP}, \overline{EY} \cong \overline{BP}, \angle Y \cong \angle P$	a.	b.
4. $\overline{BC} \cong \overline{JK}, \overline{BA} \cong \overline{JM}, \angle B \cong \angle J$	a.	b.

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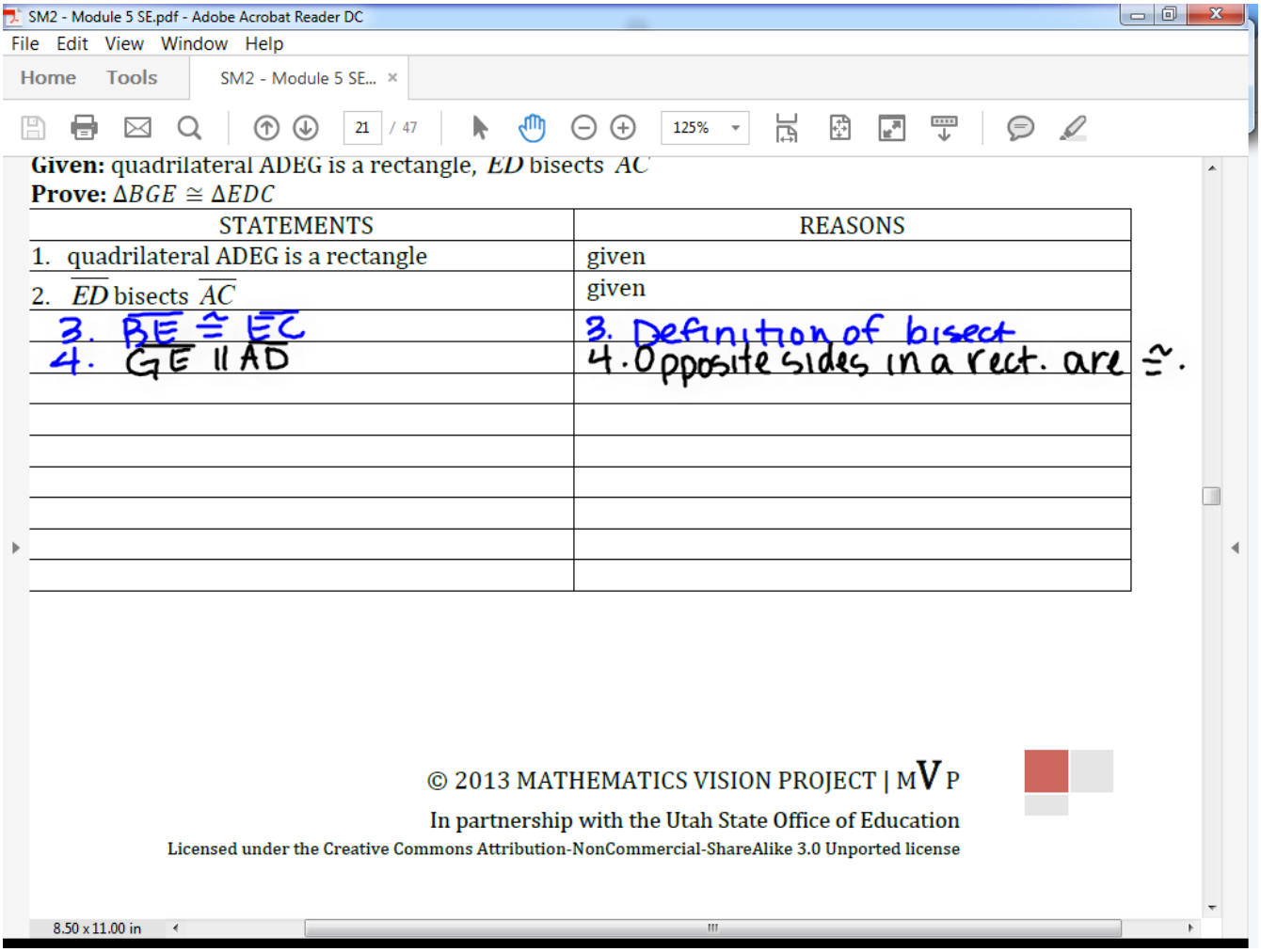

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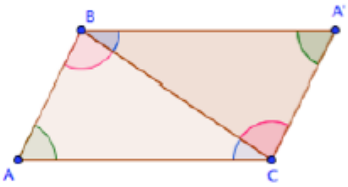
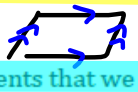
5.4 Parallelism Preserved and Protected

A Develop Understanding Task

In a previous task, *How Do You Know That*, you were asked to explain how you knew that this figure, which was formed by rotating a triangle about the midpoint of one of its sides, was a parallelogram.



You may have found it difficult to explain how you knew that sides of the original triangle and its rotated image were parallel to each other except to say, "It just has to be so." There are always some statements we have to accept as true in order to convince ourselves that other things are true. We try to keep this list of statements as small as possible, and as intuitively obvious as possible. For example, in our work with transformations we have agreed that distance and angle measures are preserved by rigid motion transformations since our experience with these transformations suggest that sliding, flipping and turning figures do not distort the images in any way. Likewise, parallelism within a figure is preserved by rigid motion transformations: for example, if we reflect a parallelogram the image is still a parallelogram—the opposite sides of the new quadrilateral are still parallel.



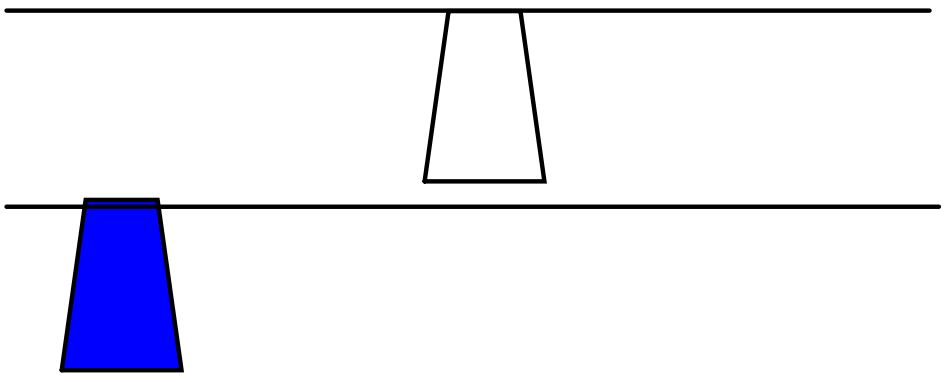
Mathematicians call statements that we accept as true without proof *postulates.* Statements that are supported by justification and proof are called *theorems.*

Knowing that lines or line segments in a diagram are parallel is often a good place from which to start a chain of reasoning. Almost all descriptions of geometry include a *parallel postulate* among the list of statements that are accepted as true. In this task we develop some parallel postulates for rigid motion transformations.

Translations

Under what conditions are the corresponding line segments in an image and its pre-image parallel after a translation? That is, which word best completes this statement?

> *After a translation, corresponding line segments in an image and its pre-image are [never, sometimes, always] parallel.*



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Give reasons for your answer. If you choose "sometimes", be very clear in your explanation how to tell when the corresponding line segments before and after the translation are parallel and when they are not.

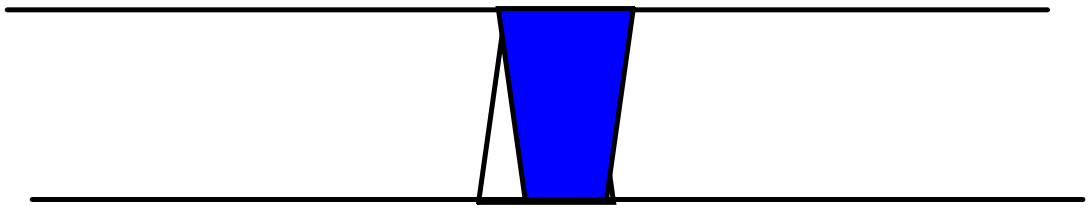
If we translate Left or Right, the corresponding sides are a part of the same line & intersect (H). But translating any other direction keeps the corresponding sides ||.

Rotations

Under what conditions are the corresponding line segments in an image and its pre-image parallel after a rotation? That is, which word best completes this statement?

After a rotation, corresponding line segments in an image and its pre-image are [never, sometimes, always] parallel.

Give reasons for your answer. If you choose "sometimes", be very clear in your explanation how to tell when the corresponding line segments before and after the rotation are parallel and when they are not.



The corresponding sides are only parallel when the figure is rotated 180°.

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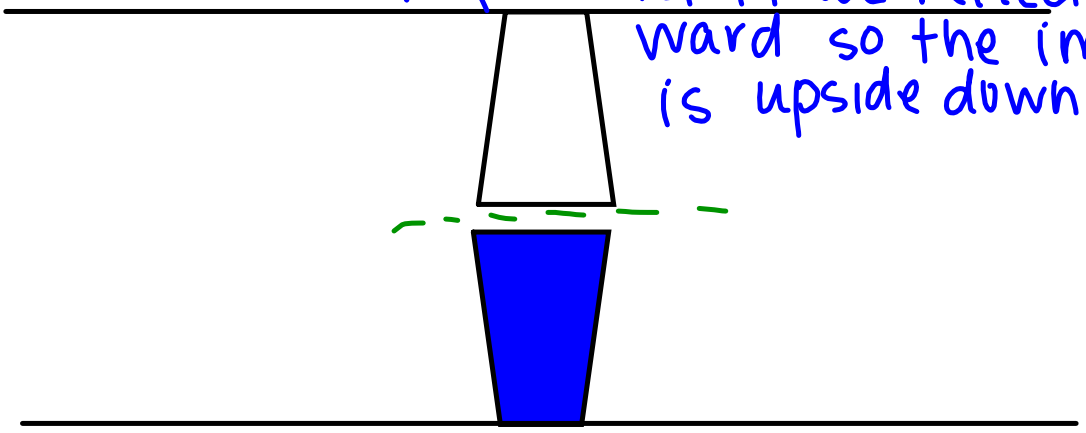
Reflections

Under what conditions are the corresponding line segments in an image and its pre-image parallel after a reflection? That is, which word best completes this statement?

> *After a reflection, corresponding line segments in an image and its pre-image are [never, sometimes, always] parallel.*

Give reasons for your answer. If you choose "sometimes" be very clear in your explanation how to tell when the corresponding line segments before and after the reflection are parallel and when they are not.

Corresponding sides will only be parallel if we reflect downward so the image is upside down



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Homework

Finish 5.4 "Ready, Set, Go"

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