

Geometry B Live Lesson Class

U4L2 - Reflections (Ch. 9-2 in textbook)



Agenda



1. Review topics and problems from Unit 4, Lesson 2 – Reflections.

2. Use the 2-column note system to take better notes in math class. Bring your math notebook and pen or pencil to each math LiveLesson class.

2-Column Notes Template



1. Announcements/To Do's
2. School-Wide Learner Outcomes
3. LL Objectives
4. Vocabulary words
5. Problems
6. Summary (End of class)

1. Write down important details.
2. What are you going to work on this week?
3. Write down your own questions.
4. Definitions (fill in as we go)
5. Steps to solving problems
6. 1 or 2 sentences about the LL class.

Reminders and To – Do's



Information

1. Complete 1 math lesson per day.
2. Check your WebMail every day
3. Be prepared to spend 4 - 6 hours per day on schoolwork.
4. Remind your Learning Coach to take daily attendance

What to do

1. Go to your Planner in Connexus to find the math lesson for the day
2. Go to Connexus to find WebMail
3. Complete lessons for the day from your Planner. Do not get behind on lessons.
4. Have your Learning Coach log into Connexus daily.

Reminders and To – Do's



Information

5. Go to the Message Board first for information about our math class.

6. Contact Mr. Elizondo for math questions.

Remember: You need at least 2 phone calls with Mr. Elizondo per semester.

What to do

6. Call (559) 549 - 3244 and leave a voicemail if call is not answered.

Make an appointment at:
<https://elizondo.youcanbook.me>

Send a WebMail

U4L2 – California Common Core State Standards



- HSG-CO.A.5: Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.
- HSG-CO.A.2: Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).
- HSG-CO.B.6: Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.
- HSG-CO.A.4: Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.

U4L2 – Objectives



- Identify isometries
- Find reflection images of figures

U4L2 – Vocabulary Words



- composition of transformations
- image
- isometry
- preimage
- reflection
- rigid motion
- transformation
- translation

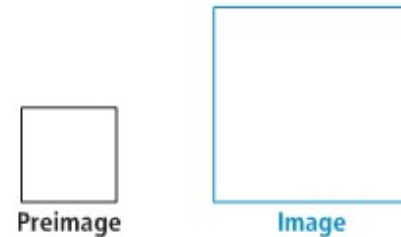
U4L1 & 2 – Isometry



An **isometry** is a transformation in which the preimage and image are congruent.

What are examples of transformations that are isometries?

Translations, reflections, and rotation

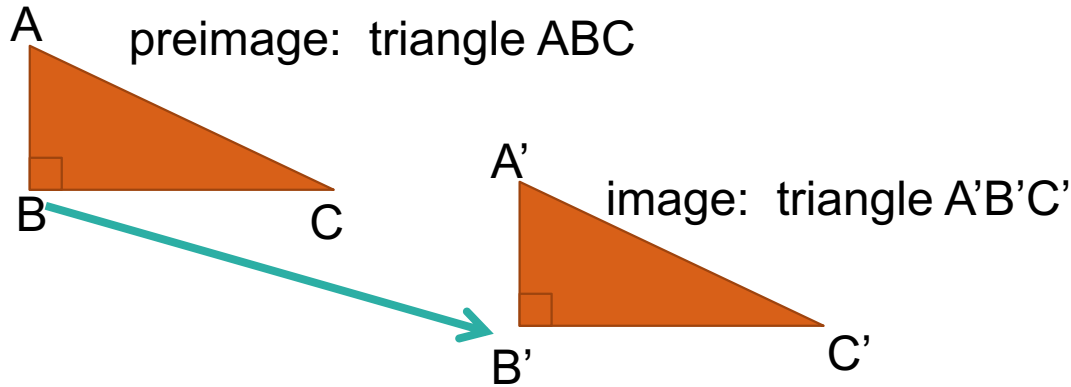


Not an isometry

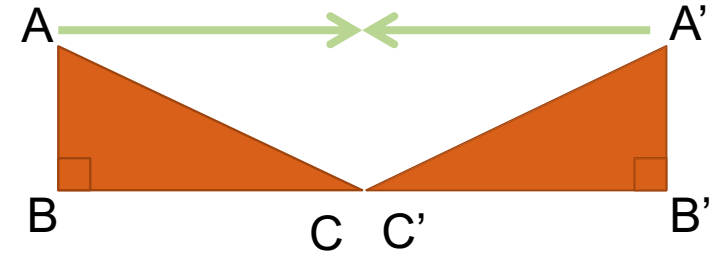


An isometry

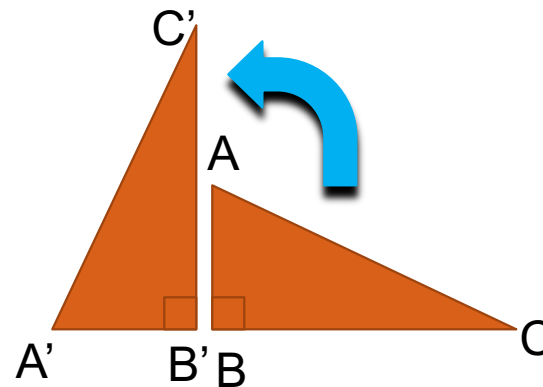
U4L1 & 2 – Isometry



Translation (slide)



Reflection (flip)



Rotation (turn)

Rotations are made in a **counter-clockwise** direction!!

U4L1 – Concept Corner - Translation

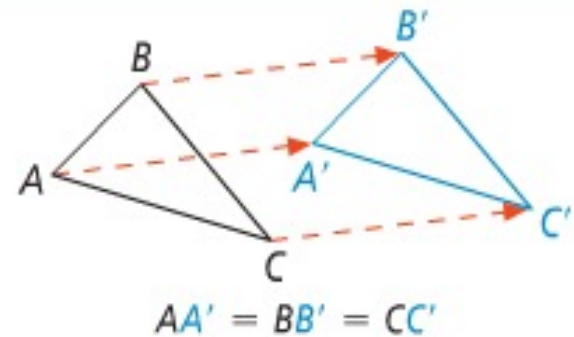


take note

Key Concept Translation

A **translation** is a transformation that maps all points of a figure the same distance in the same direction.

A translation is an isometry.



$$(x, y) \rightarrow (x + h, y + k)$$

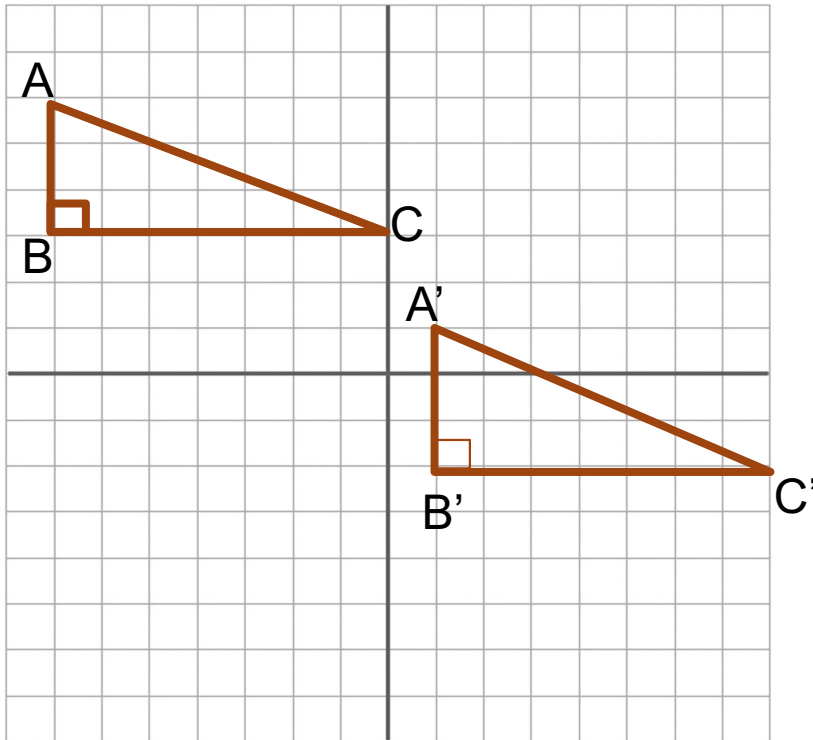
'h' is a horizontal change (left/right)

'k' is a vertical change (up/down)

U4L1 – Practice Problems - Translation



What is the rule that describes the translation $ABC \rightarrow A'B'C'$?



$$A(-7, 6) \rightarrow A'(1, 1)$$

$$x: -7 + x = 1 \quad y: 6 + y = 1$$

$$x: x = 8 \quad y: y = -5$$

$$(x, y) \rightarrow (x + 8, y - 5)$$

$$B(-7, 3) \rightarrow B'(1, -2)$$

$$C(0, 3) \rightarrow C'(8, -2)$$

U4L1 – Composition of a Transformation



A **composition of a transformation** is a combination of two or more transformations.

U4L1 – Practice Problems – Composition of Translations



Find a translation that has the same effect as the composition of translations.

$$(x, y) \rightarrow (x + 2, y + 5) \text{ followed by } (x, y) \rightarrow (x - 4, y + 9)$$

Add the x movements together and the y movements together.

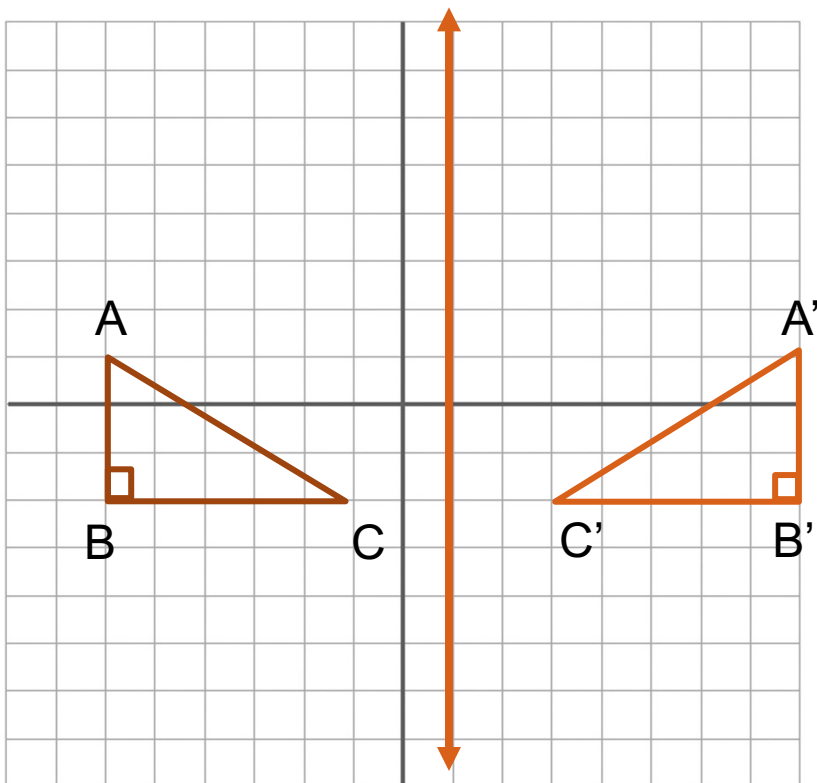
$$2 + (-4) = -2, 5 + 9 = 14$$

$$(x, y) \rightarrow (x - 2, y + 14)$$

U4L2 – Practice Problems – Reflections



Find the line of reflection.

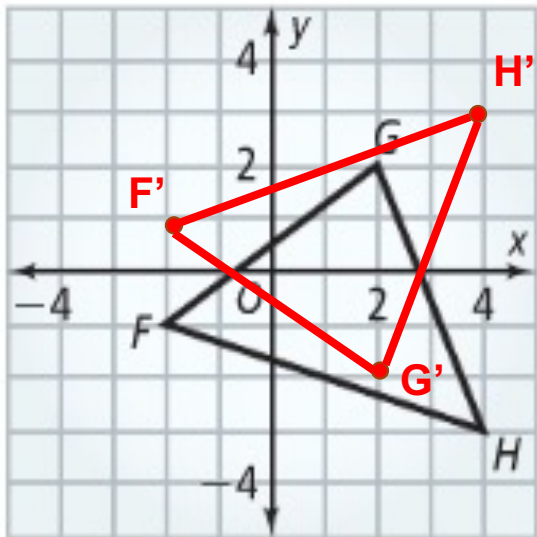


Equation of the line: $x = 1$

U4L2 – Practice Problems – Reflections



Graph the image of $\triangle FGH$ reflected across the x-axis.

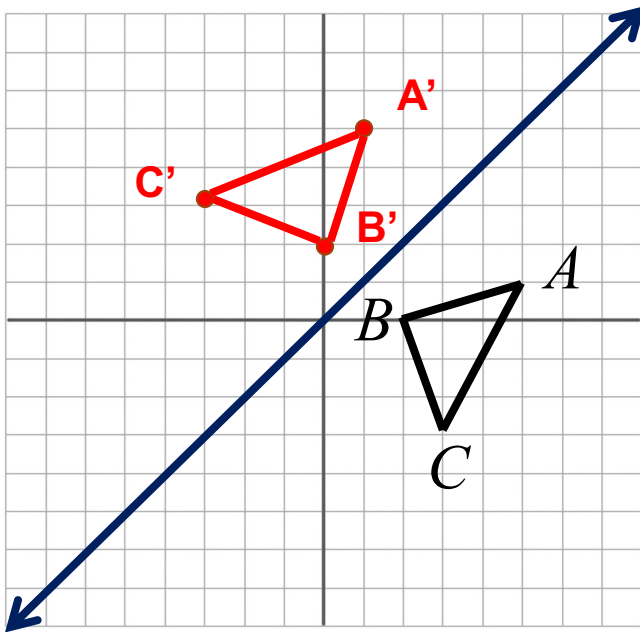


The x-axis is called the
Line of Reflection.

U4L2 – Practice Problems – Reflections



Reflect $\triangle ABC$ across the line $y = x$



Preimage	image
$A(5,1)$	$A'(1,5)$
$B(2,0)$	$B'(0,2)$
$C(3,-3)$	$C'(-3,3)$

Make a conjecture about the coordinates of the point $P(a, b)$ reflected across the line $y=x$

$$P(a,b) \rightarrow P'(b,a)$$

U4L2 – Reflection



What is an isometry?

An isometry is a transformation in which the preimage and image are congruent.

Questions?



- Check the Message Board first
- Send a WebMail
- You can also make an appointment at <https://elizondo.youcanbook.me>
- You can also call me at (559) 549-3244. If I'm not available to answer your call, please leave a voicemail with your full name and phone number.