10th Grade Geometry - Unit 8: Transformational Geometry

Bronx Early College Academy

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4 March 2019

Laptops - Geogebra class codes

7.10 Geogegra transformations intro. Tuesday 12 February

7.15 Geogegra median partition 2:1 ratio. Tuesday 26 February

8.1 Geogegra - Transformations project Tuesday 6 March

8.2 Dilation and similar triangles. Wednesday 7 March

8.3 Dilation and similar triangles. Thursday 8 March

8.4 Symmetry, "onto" transformations. Monday 11 March

8.5 Geogegra - Reflected+dilated $\triangle$ similarity project Tuesday 12 March

8.5 Geogegra construction

8.5 Geogegra - Secant segment length relationships

8.6 SAS Similarity & rotational symmetry. Wednesday 13 March

GQ: How do we model with digital tools?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.1 Tuesday 18 January

GeoGebra Geometry App
Enter N7BHK for 10.1 or P9PNZ for 10.2
Set up account using your real name.
Beginner Tutorials with Lesson Ideas
Author: Tim Brzezinski

Homework: Complete Geogebra

GQ: How do we apply translations to functions?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 7.10 Tuesday 12 February

Geogebra project: Create a transformations puzzle problem

1. Start with a polygon
2. Use Geogebra's tranformations tools
3. List the transformation steps you used
4. Rubric: correct, aesthetics, MLA
5. Print out a color pdf to email me. (husonbeca@gmail.com)

Lesson: Geogebra tool pallette

Homework: Practice problems

GQ: How do we use technology to explore geometric relationships?

CCSS: MP5 Use appropriate tools strategically: dynamic geometry software 7.15 Tuesday 26 February

Do Now: Practice analytic geometry skills on handout

Lesson: Geogebra project to measure the division of a median of a triangle by the centroid

1. Start with a triangle, connect two midpoints and medians, intersecting at the centroid
2. Use Geogebra's measurement tools
3. Explain the resulting 2:1 ratio using text and symbols
4. Assessment rubric: correct, aesthetics, MLA
5. Print out a color pdf to email me. (husonbeca@gmail.com)

Homework: Pretest packet due Thursday (test Friday)

GQ: How do we use technology to explore geometric relationships?

CCSS: MP5 Use appropriate tools strategically: dynamic geometry software 8.1 Tuesday 6 March

Lesson: Geogebra project showing various transformations

1. Apply transformations to polygons (show at least two)
2. Use Geogebra's formating tools
3. Label with the transformation's specifics (e.g. center, factor)
4. Rubric: correct, aesthetics, MLA & email standards
5. Export a .png to email me. (husonbeca@gmail.com)
6. Filename: Last-Title.png, email subject line message

Parent conferences this Thursday evening, Friday afternoon

Homework: Test corrections (due tomorrow)

GQ: How do we transform objects on the coordinate plane?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 8.2 Wednesday 7 March

Do Now Plotting transformations review review

1. Handout

Lesson: Translation, reflection, rotation, dilation, composition, properties

Homework: Practice problems handout

GQ: How do we transform objects on the coordinate plane?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 8.3 Thursday 8 March

Do Now Analytic geometry review

1. Point-slope form of linear equations
2. Applications of slope, graphing linear equations
3. The equation of a circle, deriving center and radius

Lesson: Midlines, medians, the centroid. Measuring with Geogebra, submissions standards

Homework: Practice problems handout

GQ: How do we say that objects are mapped "onto" themselves?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 8.4 Monday 11 March

Do Now Analytic geometry practice

1. Point-slope form of linear equations
2. Applications of slope, graphing linear equations
3. The equation of a circle, deriving center and radius

Lesson: SSS Similarity;
Symmetry in terms of tranformations *onto* oneself

Homework: Practice problems handout

GQ: How do we use technology to explore geometry?

CCSS: MP5 Use appropriate tools strategically: dynamic geometry software 8.5 Tuesday 12 March

Lesson: Combining Geogebra and Microsoft Word

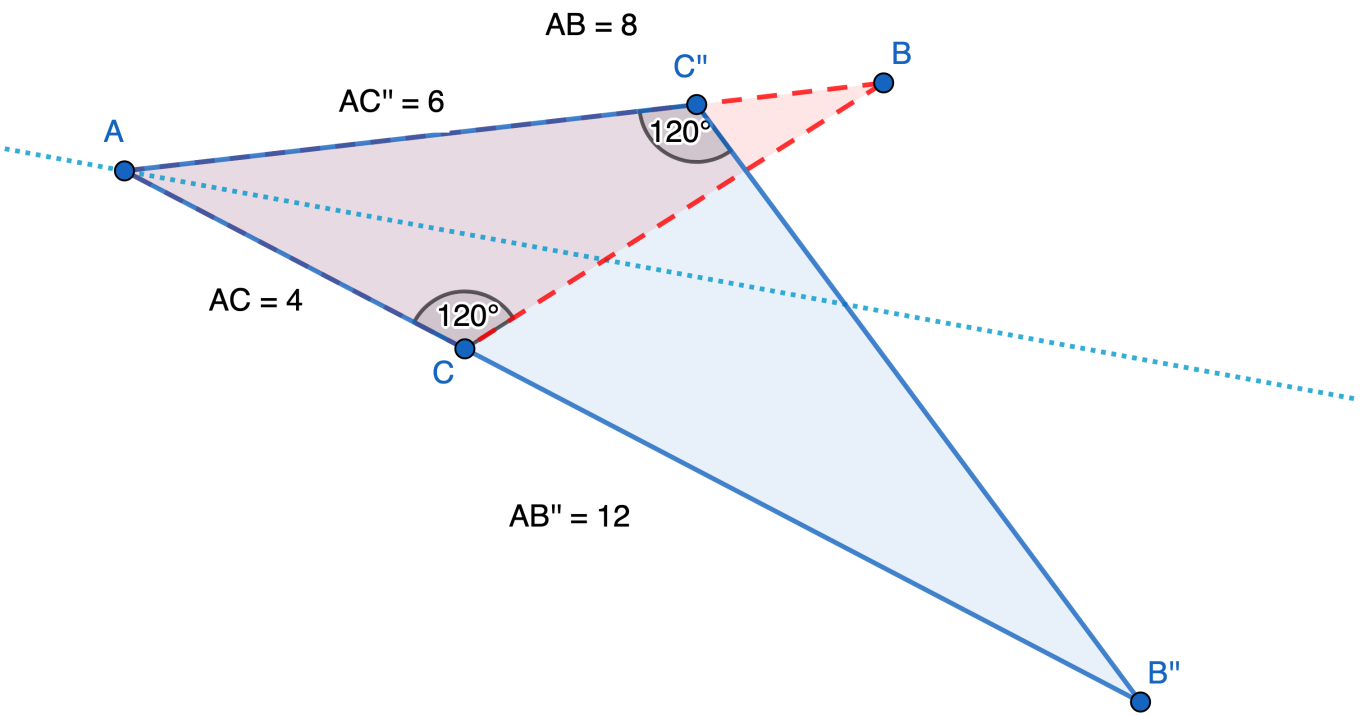
1. Reflect $\triangle ABC$ across the bisector of $\angle A$, yielding $\triangle A'B'C'$
2. Dilate $\triangle A'B'C' \to \triangle A''B''C''$ ($\triangle A'B'C'$ is then hidden)
3. Spicy: measure corresponding sides and/or angles
4. Export a .png file. Insert it in Word, adding heading & title.
5. Spicy: add text and formulas using Microsoft's formula bar
6. Email me: Last-Title.pdf, with subject line & message
7. Rubric: correct, aesthetics, MLA & email standards

π Day, Friday afternoon

Homework: Complete project (due by 10:00 pm)

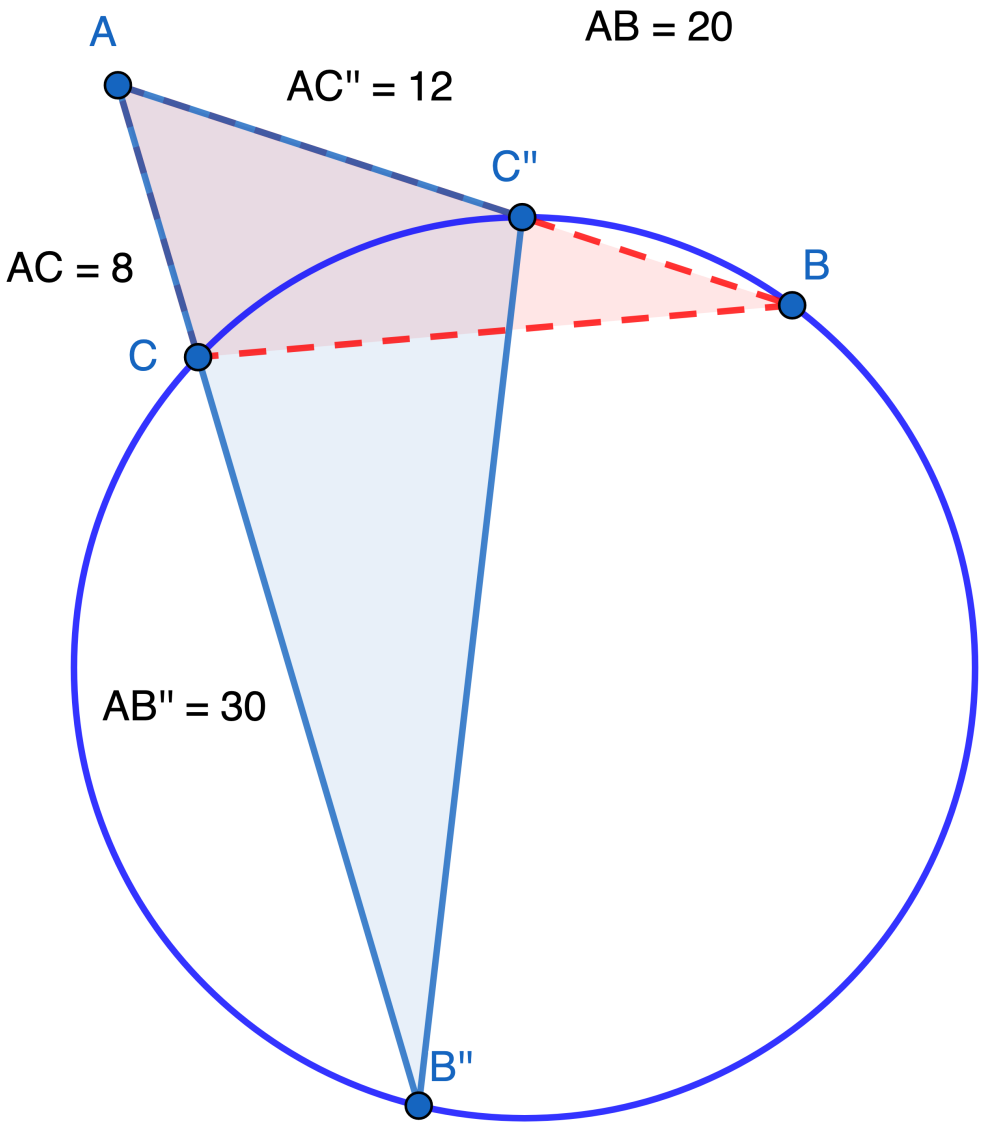
The red triangle has been reflected across its angle bisector and dilated from its own vertex

Hide the intermediate triangle so only the preimage and final image are shown.



The Geogebra image file should be inserted into Microsoft Word
Spicy: angle measures and segment lengths

Two circle secants form two similar (reflected) triangles



GQ: How do we calculate angles of rotation mapping "onto" itself?

CCSS: HSG.CO.D.12 Congruence, geometric constructions 8.6 Wednesday 13 March

Do Now Similar triangle handout

1. Naming corresponding relationships
2. Determining equal ratios (to scale factor)
3. Applying similarity relationships in situations

Lesson: SAS Similarity;
Rotational symmetry

Homework: Practice problems handout